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ABSTRACT

WITH INFORMATION DERIVED FROM IPI PLACEMENT TESTS, UNIT PRETESTS, CURRICULUM EMBEDDED TESTS (CET'S) AND UNIT POSTTESTS; STUDENT PERFORMANCE ON PRESCRIBED IPI TESTS AND SKILL SHEETS, AND OBSERVATION OF STUDENTS' BEHAVIOR, THE TEACHER SHOULD, AFTER PLANNING SESSIONS, BE ABLE TO INITIATE THE BUILDING OF A BASIS FOR INSTRUCTIONAL DECISION MAKING IN INDIVIDUALIZED INSTRUCTION AND TO APPLY IT TO DEVELOPING HIS OWN PRESCRIPTIONS. IT IS TO THIS END THAT THIS THIRD VOLUME OF A FIVE-VOLUME PROJECT IS DESIGNED. (GC)

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# TEACHING IN IPI

EM007 736

Volume III

**T E A C H I N G   I N   I P I**  
**(A Program of Teacher Preparation)**

**by**

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**U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE**  
**OFFICE OF EDUCATION**

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**Volume 3**

**Research for Better Schools, Inc.**

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## **TEACHING IN IPI**

### **Section IV**

#### **Developing a Prescription**

##### **Part 1**

- A. Introduction**
- B. Guidelines for Instructional  
Decisions in Developing a  
Prescription**

**Suggested setting: Individual work  
Group 3-6**

Section IV will give you an opportunity to start building a basis for instructional decision-making in individualized instruction and to apply this to developing a number of your own prescriptions.

This section contains a brief introduction to the importance of the teacher's professional judgment in developing a prescription; a set of suggested guidelines for developing a prescription; and a set of simulated prescription-writing exercises. In the event there are students available you will be directed to start them working in the IPI Continuum.

As you work through this section, team up with other teachers by grade level(s), interests and/or needs to exchange information and discuss prescriptions. Since IPI teachers work together as an instructional team, these team experiences will be useful to you.

## INTRODUCTION

To the casual observer, IPI may appear to be a mechanical way of planning and conducting instruction in the classroom. This could easily be the case if children differed only in their rates of learning. In that case, the teacher would simply map out a standard program of instruction for the school year and move the students through at different speeds. Instructional decision-making would be at a minimum since materials, procedures, teaching methods, etc. would be arbitrarily predetermined for the entire class.

But this is not IPI. IPI is a system of individualized instruction that recognized that children differ in a variety of observable ways. It offers the teacher a framework within which to individualize instruction as well as some prepared materials to help in the task. However, since neither is sufficient to individualize instruction, the IPI teacher is encouraged to add the essential ingredient of instructional decisions. In IPI, instructional decisions are choices a teacher makes in putting together a unique program of studies for a student.

The IPI teacher starts making instructional decisions as soon as the student is placed in the Continuum and choices are made in answering these questions:

1. Which unit skills should this student be working on?
2. Which skill sheets should be prescribed?
3. Which Instructional Techniques should be prescribed?
4. How long should this student spend on a unit skill(s)?
5. What else can I devise to help this student in mastering the prescribed skills?

6. What other skills do I want this student to learn?

The series of answers to these questions asked about a particular student will result in a unique combination of learning experiences called the student's learning prescription.

The answers to these questions cannot be based upon IPI test data and skill sheet scores alone. Teacher observation of what the student is doing and how he is doing it is important. Generally speaking, IPI teachers make their instructional decisions based upon information gathered from:

1. Test information from IPI Placement Tests, Unit Pretests, CETs and Unit Posttests.
2. Student performance on prescribed IPI tests and skill sheets.
3. Observation of student's behavior as he works out solutions to problems, handles materials, manipulative devices and equipment, and as he responds to discussions and answers questions in IPI situations and non-IPI situations.
4. Planning sessions with other professional personnel sharing instructional responsibility for the student.

In addition, the IPI teacher collects information about the student from the more usual sources such as cumulative records and parent-teacher conferences.

There is no pat formula that can be used in building a prescription from these data. The teacher makes a professional judgment about the meaning of these data and starts choosing learning experiences for the student based on the judgment made. IPI teachers deviate from recommended IPI guidelines when there is some very concrete evidence to indicate the need to do so.

Once choices are made, the teacher records them on the Prescription Sheet. The Prescription Sheet is an important two-way communication link between the student and the teacher. The teacher communicates to the student the choices made by listing the: unit and unit skill(s) that have been assigned to the student; specific tests to be taken; particular skill sheets to be completed; and the Instructional Techniques to be used to bring about mastery of the skill(s). Information about student progress is communicated to the teacher through the Prescription Sheet in the form of skill sheet scores, test results and number of days worked.

The teacher supplements this communication link as needed in as many ways as can be devised. Frequently, the teacher attaches a brief note to the student's work folder or confers with the student to exchange additional information.

**GUIDELINES FOR INSTRUCTIONAL DECISIONS  
IN DEVELOPING A PRESCRIPTION**

1. Test information from IPI Placement Tests, Unit Pretests, CET's and Unit Posttests.
2. Student performance on prescribed IPI tests and skill sheets.
3. Observation of students behavior.
4. Planning sessions.

1. **Test information from IPI Placement Tests, Unit  
Pretests, CET's and Unit Posttests.**

## 1. Test Information from IPI Placement Tests,

### Unit Pretests, CETs, Unit Posttests

(Review previous sections on IPI tests.)

Placement test information will be discussed first. This will be followed by a discussion which covers jointly the use of pretest, CET and posttest information. These three tests are combined in discussion since they are similar in sampling and construction, and they test each unit skill separately.

IPI PLACEMENT TESTS, in addition to locating the student in the Continuum and providing an entry into the Continuum, offer the teacher additional information upon a little probing. The magnitude of scores on each level of a particular area can reveal a history of weakness in the area or an uneven profile of mastery. A teacher usually goes back into Placement Test scores as part of diagnosing a student's persistent learning problem and looks for "pockets" of weakness. This helps the teacher pinpoint a possible source of the difficulty.

Example: A teacher decides to check into the background of a student's inability to retain mastery of D-Numeration. The Placement Profile shows that the student had scored 18% in C-Num. He was subsequently tested in B-Num. and scored 82% in it. Technically, 80% is Placement Test mastery and he was placed back in C-Num. This sequence of low and borderline scores alerts the teacher to the possibility that the student's poor retention might be due to "borderline" mastery in B-Num. and extreme weakness in C-Num. With the potential source of difficulty (C-Num.) pinpointed, the teacher goes directly to C-Num. data to start a closer analysis of the problem.



UNIT PRETESTS, CETs AND UNIT POSTTESTS are similar tests in that they all measure a student's level of mastery of unit skills. Though each type is used at different times (before, during and after work), the tests provide point and percent scores for the unit skill(s) tested, pretest averages, posttest averages, and actual samples of the student's work.

Point and percent scores for a unit skill and unit percent averages help the teacher pick out the skills that are already mastered, the skills that are cases of borderline mastery, and the skills that definitely require a prescription. A skill score of:

100%-85% usually indicates acceptable mastery of a skill and no prescription is required. Occasionally, a teacher judges that a pretest score of 85% or a diagnostically-used CET score of 85% is not valid and decides to examine the actual skill test items to evaluate the student's work before making a decision about mastery. Usually an 85+% score on a posttest or a CET (prescribed after successful work) is accepted as mastery without any need for further checking.

85%-80% is a borderline score which indicates near mastery of a skill. This range of scores in a pretest directs the teacher to examine the right and wrong responses in the skill test before making a decision to prescribe work. On a posttest or CET, 80-85% in a skill directs the teacher to the test items and back to the work completed in the skill before an extended prescription is written.

79%- 0% indicates a definite need for a prescription in the skill and directs the teacher to examine the right and wrong responses in the skill test for a closer diagnosis. In addition, when the 79-0% is a posttest or CET score the teacher usually examines the work done previously in the skill.

The size of the score (79%-0%) indicates the size of the gap between the student's current level of achievement and the desired level of mastery.

Extremely low scores (0%-40%) may mean that the student is quite weak in that particular unit or in the math area in general. The teacher should determine which is the case before starting any prescription. 0%-40% scores may also mean that the student has made some mechanical error(s) in test-taking. This should be determined before accepting the score as lack of mastery.

Scores ranging from 40%-60% and 60%-80% indicate increasing degrees of mastery. With this in mind, the teacher can project that skills with relatively higher scores will require shorter and less intensive prescriptions, and can plan accordingly.

Point and percent scores for a skill help the teacher quickly sort out skills into categories of mastery, borderline master and no mastery. Teacher judgment and familiarity with the content of IPI tests play an important part in this sorting out process. Since the process singles out the skills requiring further attention, it is a vital one.

Pretest and Posttest Averages provide an immediate picture of overall strength in the unit. They are the averages of the skill scores in the unit. A unit percent average by itself is not much help to a teacher. A unit average is useful when related to the unit skill scores to determine if there is a general weakness in the unit or an isolated weakness in a specific skill. For example, a unit average of 73% can be obtained from both of these sets of skill scores--90, 90, 20, 90 and 75, 70, 68, 77. In the first set, the 73% is due to a weakness in one skill. In the second set, the 73% indicates a weakness in each skill in the unit.

2. Student performance on prescribed  
IPI tests and skill sheets.

## 2. Student Performance on Prescribed

### IPI Tests and Skill Sheets

Detailed evidence of how the student behaves or performs the required skill is found in his completed tests and skill sheets. For examples, problems, or work items contained in IPI tests and skill sheets ask the student to perform the skill as stated in the skill objective.

The evidence the teacher gathers from examining the completed tests and skill sheets provides one basis for instructional decisions in developing a prescription. The teacher diagnosis the student's work to determine:

1. A pattern of errors, that is, the kinds of work items the student can do and cannot do.
2. The frequency of errors, that is, how many times the student repeats the same type of error.

Pattern of errors: The student's correct and incorrect responses on work items help the teacher break down the skill objective into smaller behaviors. The incorrect responses are diagnosed as small behaviors needing a prescription.

Example 1: B-Num.-2 requires the student to read and count orally numerals 0-100. The student's work on skill sheets shows he can read and count numerals 0-20 but he cannot go from one decade to another for numerals 21-100. He has trouble in particular going from 29-30, 39-40, 49-50, ..... 99-100. Based on this diagnosis, the teacher extends the prescription by prescribing STS B-Num.-2 skill sheets containing counting exercises in the upper decades and assigns a number-line activity or chart to help in bridging the decades.

Example 2: D-Mult.-4 requires the student to write or state products of multiplication facts in which 2, 3, 4, and 5 are factors. A student scores 81% on Part 1 of CET I for this skill. Inspection of this portion of the test indicates that six of the errors made occurred in the examples involving 3 and 5 as factors. A quick check into the last part of the prescription just completed by the student shows that this type of error occurred on his skill sheets also. Since the student's performance in D-Mult.-1, 2, 3 and in the area of Addition has been consistently good, the teacher decides the student needs only additional drill in the 3 and 5 tables. The student is directed to use a set of multiplication flashcards (factors 3 and 5) and is assigned to a peer tutor for drill. In addition, one new D-Mult.-4 STS skill sheet is prescribed to follow this drill exercise. The teacher suspends further judgment until this latest prescription is completed.

Frequency of errors: The frequency of errors that a student makes on a skill sheet or skill test is an indication of the relative strength or weakness in that skill. While determining the pattern of errors, the teacher also notes how many times the student repeats the same type of error. The more frequently the error-type is made, the more the teacher must focus the student's prescription on changing that specific behavior.

When diagnosing the frequency of errors in individual skill tests (pre and post) and CET's, the teacher examines the number and types of errors made on a sample of work items for the particular skill. The prescription following this should focus on the types of errors made and should give greater emphasis to the error-types most frequently occurring.

When diagnosing the frequency of errors on skill sheets, the teacher examines the number and types of errors made on the actual work items for the particular skill. Therefore, not only are the skill sheets examined

separately but the complete set of skill sheets prescribed simultaneously is also reviewed in toto. Since there is no established mastery criterion for skill sheets, teachers must rely heavily upon their judgment of the student's work on the skill sheets. The teacher's judgment is formed by comparing the student's work on the set of skill sheets with the behavioral statement of the required skill objective. In addition, the teacher previews the mastery test (pre, post or CET) to be taken and asks the question, "Is there a good chance that this student will score over 85% on this test?" Occasionally, when the teacher is unable to make this prediction of success with confidence, a skill sheet that closely resembles the mastery test is prescribed. The student's performance on this test like skill sheet helps the teacher decide whether or not to prescribe the test itself.

Example: B-Num.-8 requires that the student selects which of two (or three numbers) is greater (greatest), smaller (smallest) for numbers to 100; places  $>$  or  $<$  between two numbers to indicate the greater or lesser. The B-Num. Pretest - Skill 8 score for one student is 60% (6 out of 10 points). Examination of the B-Num.-8 skill test indicates that the student missed 1 out of 5 answers selecting the smallest number from a set of 3, and missed 3 out of 5 answers using the  $>$  or  $<$  symbols. The teacher quickly reviews the first error-type with the student and receives the correct answer orally. The prescription for B-Num.-8 is then started by prescribing one skill sheet covering the use of the  $>$  and  $<$  symbols. The student will show it to the teacher after he completes it and the aide has corrected it.

3. Observation of student's behavior.

### 3. Observation of Student's Behavior

The prescriptions an IPI teacher develops are deliberately designed to help the student change his behavior. Sometimes the change is the acquisition of a new IPI math skill, the strengthening of some existing behavior or the extinction of an undesirable one. Since the teacher's focus is on behavioral change, the student's existing behaviors are the data used to make instructional decisions. It is important to observe and interpret the student's performance on IPI tests and skill sheets in order to analyze and prescribe for the specific IPI skill to be mastered. However, the teacher must also take into account and use relevant data about other student behaviors in creating a total learning environment for the student.

Included in these relevant data are:

1. All those behaviors that will help the student learn the desired IPI math skill.
2. All those behaviors that will hamper the student's learning the desired IPI math skill.
3. All behaviors other than the specified IPI math skills that the teacher (or school district) sees as desirable educational goals in a math program.

The following discussion of each of these areas is intended to provide a framework for observing student behavior in IPI. It is not within the scope of these materials to explore fully the complex area of child study. Success in observing and interpreting student behavior will depend greatly upon the expertise the teacher brings to the current situation,



the group discussions used in working through these materials, and continued inservice work in child study as IPI is implemented in the classroom.

Behaviors that will help the student learn the desired IPI math skill: The student's interests, attitudes, and preferences are important factors in motivating students and sustaining their attention in any school program. Each time a prescription is written, it should attempt to capitalize upon some behavior that will make it easier or more pleasant for the student to learn the prescribed skill. For example: A desire for peer recognition is used to motivate a student to master a skill in order to tutor another student needing help; a student whose attention span is increased by competition is assigned to small group instruction under teacher supervision; a student who enjoys constructing things is encouraged to make a set of manipulative devices demonstrating his mastery of some math skill or part of a skill. These are familiar examples of techniques used by teachers sensitive to the way children learn best.

Occasionally, when the positive behaviors that help children learn readily are weak or do not exist, IPI teachers de-emphasize prescribing for mastery of the IPI skill temporarily and emphasize prescribing activities to develop or strengthen the positive behaviors. This is a temporary strategy that is well worth the time invested.

This is particularly true in relation to certain behaviors that enable the student to work smoothly in IPI. More specifically, these behaviors are:

1. Following oral and written directions.
2. Obtaining prescribed materials independently.

3. Following a prescription independently.
4. Attempting to solve problems independently before requesting help.
5. Requesting help when unable to solve problem independently.
6. Following IPI procedures for using the aide's services.
7. Working with a variety of adults.
8. Maintaining the order of the student folder.
9. Operating and using disc players, manipulative materials, film-strip projectors and other equipment called for by the prescription.
10. Selecting and engaging in some constructive activity while waiting for teacher help.
11. Using performance in a prescription for self-diagnosis.
12. Accepting mastery as a criterion.
13. Self-prescribing.

In developing a prescription, it is important to encourage and reward the student in acquiring these behaviors along with mastering the IPI skill.

Behaviors that will hamper the student's learning the desired IPI math skill: Frequently, as a student works on mastering an IPI skill, the teacher will observe the existence of certain other behaviors that impede or hamper the student's progress. They may be certain social behaviors, physical characteristics or improper study skills that make it difficult for the child to achieve mastery. Depending upon the behavior and the teacher's judgment of the situation, the teacher will compensate

for the behavior or give the student limited opportunity to exhibit it. Still, with other behaviors, the teacher will work towards extinguishing them while substituting more appropriate ones.

For example: A highly energetic, physically restless child receives a prescription that includes some large motor activity and a minimum of extended pencil and paper exercises; a student who is easily frustrated in learning a new skill is introduced to the skill by the teacher; a student, highly dependent upon teacher help, is initially refused help and directed by his teacher to think of two possible solutions to his latest request for help. The teacher praises his efforts and guides him to the solution of the problem.

Behaviors other than IPI math skills that are desirable educational goals: Frequently, the teacher has a number of over-arching broad educational goals of elementary education, that appear in every curricular area taught. Such broad goals as development of group processes, social applications of math, development of special talents, etc. are persistent themes in many elementary school programs. In addition, IPI, to function successfully as a system, depends upon broad educational goals of self-initiation, self-direction, problem-solving processes, self-evaluation, and self-motivation. In developing prescriptions, an IPI teacher makes every effort to select instructional resources that will contribute toward these goals as well as toward the mastery of the IPI skills

#### **4. Planning sessions**

#### 4. Planning Sessions

During planning sessions, IPI teachers, sharing the instructional responsibility for a particular group of students, meet to share information and plan for their students on a regularly scheduled basis. This provides the teacher with:

1. Additional information about the student's behavior as observed by other professionals in different settings.
2. An exchange of ideas and suggestions (old & new) for developing improved prescriptions.
3. Help in analyzing instructional problems and in designing appropriate solutions.

During this time, the teacher gathers more data about the student and increases her repertoire of professional competency. Both of these outcomes can be used to improve the quality of instructional - decision-making in IPI.

(Planning sessions are discussed in greater detail in Section V.)

## **DIRECTIONS FOR GUIDING STUDENTS THROUGH THE CONTINUUM**

If there are students available to you, you will be able to guide them through the Math Continuum. It is suggested that you also complete the simulated case studies as directed.

In order to take students through the Continuum you will need a full set of IPI materials (student and teacher editions). You may act as teacher and aide or rotate these roles with the other teachers working through these materials.

Use the Guidelines contained in Teaching in IPI to place the students in the Continuum and to develop prescriptions for them.

If time permits, continue working through the Continuum yourself.

The simulated case studies that follow are designed to help you gain experience in developing prescriptions.

Form groups of 3-6 teachers with whom you will confer at intervals as you work through the simulated exercise. The teachers should be working on the same case study.

There are four types of case studies presented:

1. Type 1 is a complete simulation in which all data and instructional decisions are supplied. It is designed to familiarize you with the detailed flow of developing a prescription.
2. Type 2 is a partial simulation in which all data are supplied and you are asked to record the instructional decisions. It is designed to give you practice in using IPI procedures and forms.
3. Type 3 is a simulation in which some data are supplied and you are asked to make the instructional decisions. You are given model sample instructional decisions against which you will evaluate your own decisions. Small group discussion is extremely important in evaluating your work in this simulation. By pooling your experience and professional knowledge with the other teachers in your group, you will have an opportunity to develop a variety of alternate decisions for the simulated prescription.

4. Type 4 is a simulation in which basic data are supplied and model decisions are not given. This simulation is the briefest and most closely resemble the more rapid flow of instructional decision-making followed by an IPI teacher. Small group discussion at frequent intervals is essential in working through this simulation.

The simulated case studies you will work on are indicated in the table below. You are asked to complete a minimum of four.

Type	Case Study	To be completed by
1	Joe Bowen : C-Frac.	All teachers
2	Susan Markham : D-Mult.	All teachers
3	Sandy Owens : B-Num.	1st & 2nd grade teachers
3	Ralph Stoney : F-Div.	3rd, 4th, 5th & 6th grade teachers
4	John Tanes : C-COP	1st, 2nd, 3rd & 4th grade teachers
4	Eileen O'Brien: E-Num.	5th & 6th grade teachers



# TEACHING IN IPI

## Section IV

### Developing a Prescription

#### Part 2

##### A. Simulated Case Studies

1. Joe Bowen : C-Frac.
2. Susan Markham : D-Mult.
3. Sandy Owens : B-Num.
4. Ralph Stoney : F-Div.
5. John Tanes : C-COP
6. Eileen O'Brien: E-Num.

#### Simulated Case Studies

by

Mary V. Brown, Research Assistant

assisted by

Jo Ann Weinberger, Research Assistant

Suggested setting: 1. Individual  
2. Groups 3-6

## **Section IV**

### **DEVELOPING A PRESCRIPTION**

#### **CASE STUDY - TYPE 1**

**JOE BOWEN**

**C-FRAC.**

This is Joe's Placement Profile. He has worked through units:  
B-Numeration, B-Place Value, B-Fractions, C-Numeration, C-Place  
Value, C-Addition and C-Subtraction.

Examine the Profile and note the order of unit assignment.

Joe's next unit of work will be C-FRACTIONS.

SCHOOL STAMP

P. 2-3

STUDENT  
NAME

Joe Bowen

STUDENT  
NUMBER

0	9	7	6
P-4	5	6	7

GRADE

3

P.

9

ROOM

107

KEYPUNCH SAMPLE

P. 14-15	P. 16	P. 17-18	TO P. 78
MATH. AREA CODE	PLACED AT LEVEL	% OF PLACEMENT	
01	B	85	

MATHEMATICS AREA	DATE OF TEST	MATH AREA CODE	PLACEMENT LEVELS B—I								PLACED AT LEVEL
	P. 10-13		B	C	D	E	F	G	H	I	
NUMERATION	9/30	01	MAX. PTS.	10	10						
			SCORE	6	2						B
			%		20						1,4
PLACE VALUE		02	MAX. PTS.	10	10						
			SCORE	6	1						B
			%	60	10						2,5
ADDITION		03	MAX. PTS.	<del>10</del>	10						
			SCORE	<del>6</del>	7						C
			%	<del>60</del>	70						6
SUBTRACTION		04	MAX. PTS.	<del>10</del>	10						
			SCORE	<del>6</del>	6						C
			%	<del>60</del>	60						7
MULTIPLICATION		05	MAX. PTS.	<del>10</del>							
			SCORE	<del>6</del>							D
			%	<del>60</del>							
DIVISION		06	MAX. PTS.	<del>10</del>							
			SCORE	<del>6</del>							D
			%	<del>60</del>							
COMBINATION OF PROCESSES		07	MAX. PTS.		10	10					
			SCORE		8	3					D
			%		80	30					
FRACTIONS		08	MAX. PTS.	10	10						
			SCORE	5	1						B
			%	50	10						3,8
MONEY		09	MAX. PTS.		10						
			SCORE		6						C
			%		60						
TIME		10	MAX. PTS.		10						
			SCORE		4						C
			%		40						
SYSTEMS OF MEASUREMENT		11	MAX. PTS.		10	10					
			SCORE		9	3					D
			%		90	30					
GEOMETRY		12	MAX. PTS.		10						
			SCORE		5						C
			%		50						
ADDITION AND SUBTRACTION		34	MAX. PTS.	10	<del>10</del>						
			SCORE	10	<del>10</del>						C
			%	100	<del>100</del>						

ORDER

Since Joe's next unit of work is C-FRACTIONS, examine his work on the Placement Test in C-Fractions. It is on page 22.

The procedures for writing Joe's prescriptions in this unit are outlined for you in this case study. Follow them carefully. There will be several points at which you can review these procedures before Joe completes this unit.

NAME AND NUMBER Joe Bowen 0976

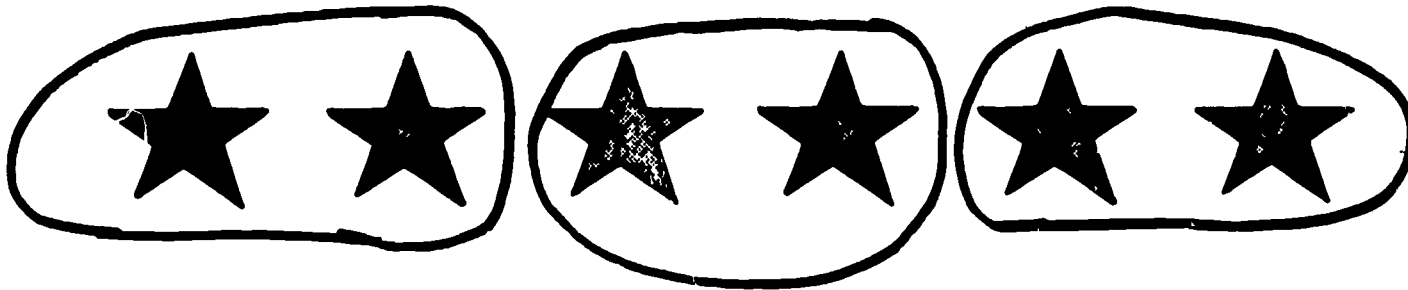
unit page 1 of 1

DATE \_\_\_\_\_

CLASS 3

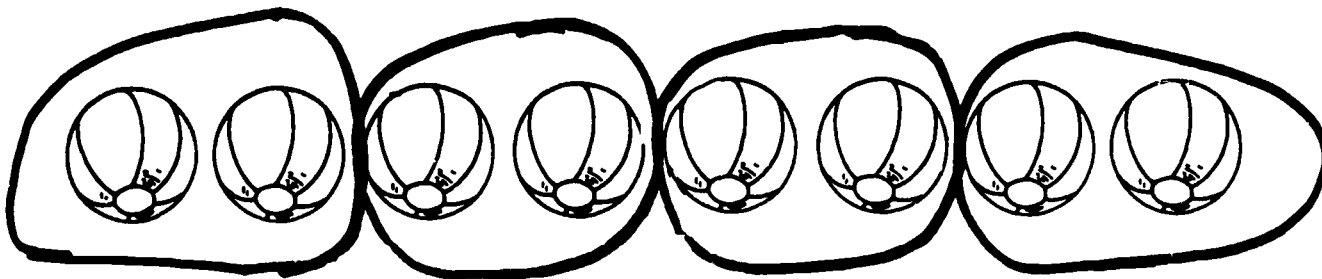
C I R C L E  C O U N T I N G  B O O K	TL PTS	
	8	100%
	NO. OF PTS	%
	3	75
	2	50
	1	25

**Skill 3 — Directions:** Look at the row of stars. Divide the row into thirds by drawing a circle around all the stars in each third.



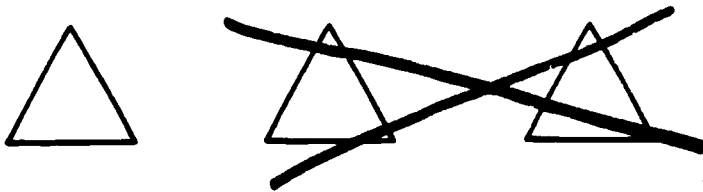
three  
sets of  
2 each

Look at the row of balls. Divide the row into fourths by drawing a circle around all the balls in each fourth.



four  
sets of  
2 each

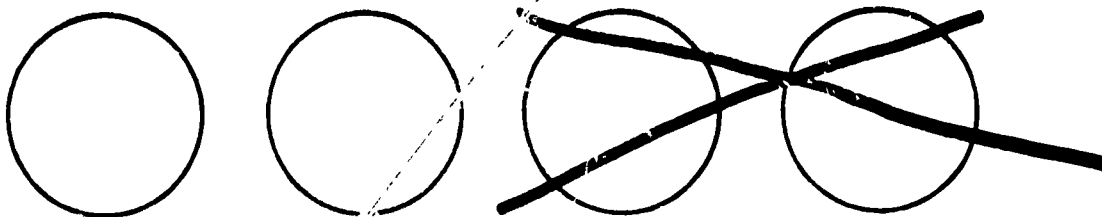
**Skill 4 — Directions:** Look at the row of triangles. Make an X on  $\frac{1}{3}$  of them.



any  
one  $\Delta$

Look at the row of circles.

Make an X on  $\frac{1}{4}$  of them.



any  
one  $\bigcirc$

You assign the C-Fractions Pretest by writing C-Frac. in the unit space at the top of the Prescription Sheet and by writing Pretest on line 1.

See sample on opposite page 

Joe will get his Pretest and complete it. He will give the completed Pretest to the Aide for scoring.

U. S. 2-3

STUDENT NAME

Joe Bowen

STUDENT NUMBER

0976

U. S. 4567

GRADE

3

ROOM

107

U. S.

9

UNIT

C-Frac.

U. S.

10

11

12

UNIT DATES

UNIT BEGAN

U. 13-16

UNIT ENDED

U. 17-20

DAYS WORKED\*

U. 21-22

SCHOOL CALENDAR

BEGAN

U. 23-25

ENDED

U. 26-28

Worked

	SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
	DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX. POINTS	PART 1		PART 2				
	→	→	→	↓	↓			SCORE	%	SCORE	%			
	PRES.	INIT.	NO.	NO.	TECH CODES			S. 72-73	S. 74-75					
	S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71			SCORE	%	SCORE	%		S. 76-77	
1	2/1	MB	Pretest											
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

OVERFLOW

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
			▼		▼		▼		▼
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									



**This is a copy of Joe's Pretest that has been scored by the Aide.**

**Turn to pages 39, 40 and 41 for directions to the Aide.**

**Page 39 will direct the Aide to record information on the Prescription Sheet.**

**Page 40 will tell the Aide where to record information on the Unit Test Record.**

SCHOOL CODE

NAME Joe Bowen

NUMBER 0976 CLASS 3



*improving professional test use*

**MATHEMATICS**

**Pre-Test**

**LEVEL C**

**FRACTIONS (08)**

Developed by The Testing and Evaluation Staff, Learning Research and Development Center, University of Pittsburgh; Richard Cox, Ph.D., Director

Appleton-Century-Crofts



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**DEVELOPMENTAL EDITION**

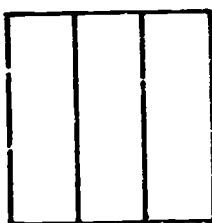
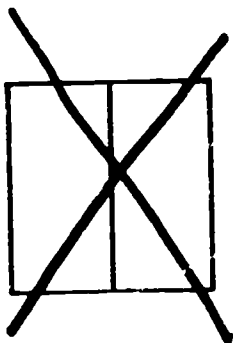
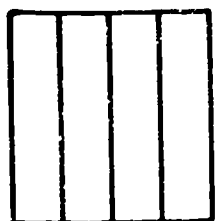
# C FRACTIONS (08) PRE-TEST

SKILL 1

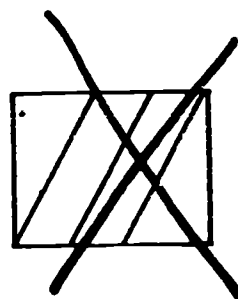
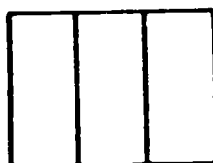
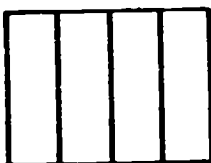
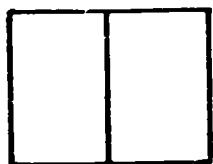
Directions: Put an X on the figure that is divided into ...

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

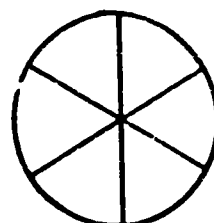
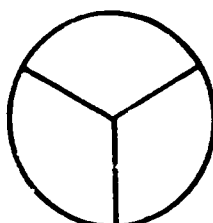
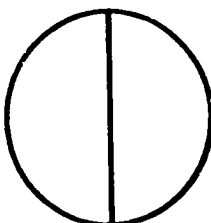
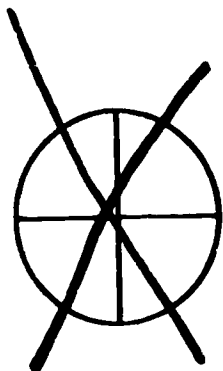
halves



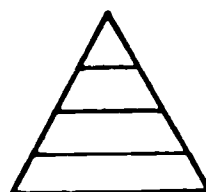
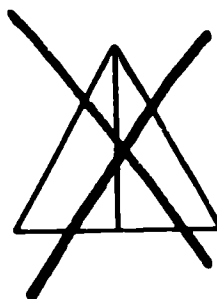
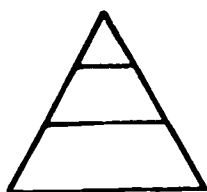
**X** thirds



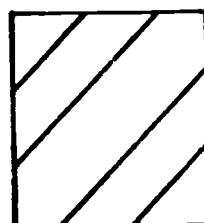
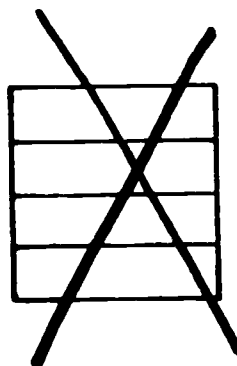
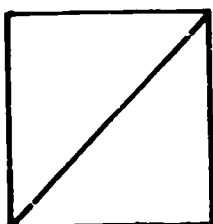
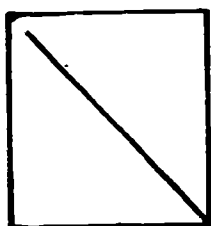
fourths



halves

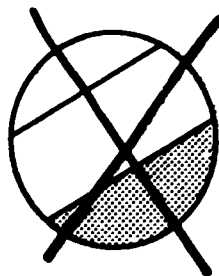
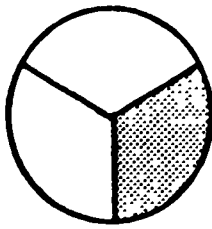
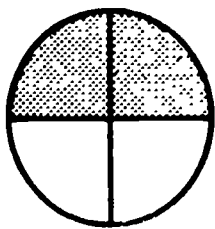


fourths

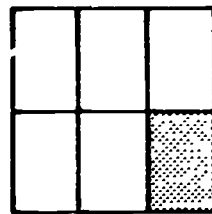
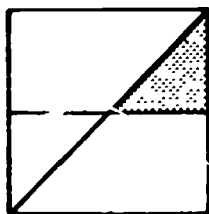
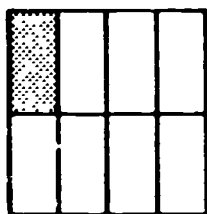
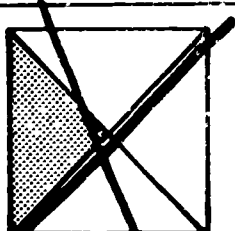


Directions: Put an X on the figure which is shaded to match the printed fraction.

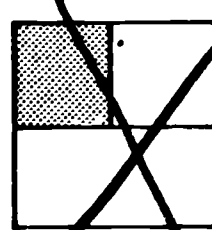
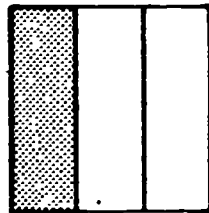
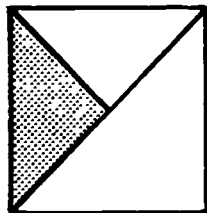
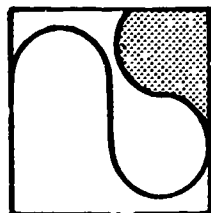
$\frac{1}{3}$



$\frac{1}{4}$



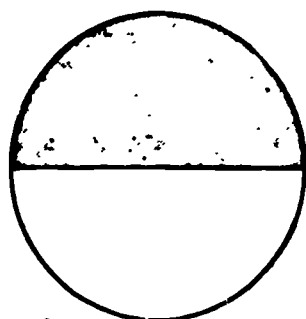
$\frac{1}{3}$



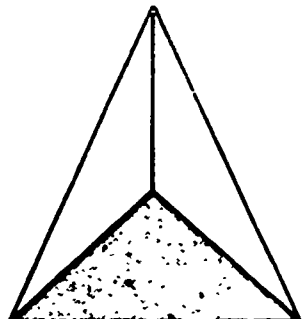
Directions: Fill in the blank.

One-third means 1 of 3 equal parts.

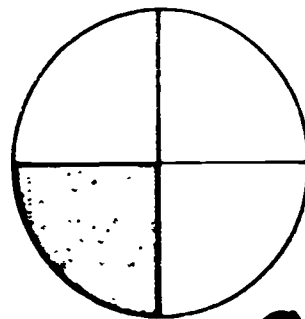
Directions: Draw a circle around the fraction that tells what part of the figure is shaded.



$\frac{1}{2}$   $\frac{1}{3}$   $\frac{1}{4}$



$\frac{1}{2}$   $\frac{1}{3}$   $\frac{1}{4}$



$\frac{1}{2}$   $\frac{1}{3}$   $\frac{1}{4}$

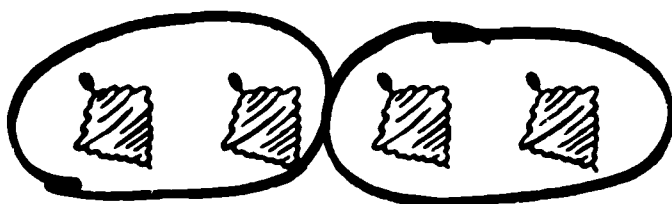
39

C I R C L E	TL. PTS.	
	7	100%
C O R R E C T	NO. OF PTS.	%
	6	86
B O X	5	71
	4	57
	3	43
	2	29
	1	14

Directions: Circle the parts of each row that will divide the row into . . .

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	
	4	80
	3	60
	2	40
	1	20

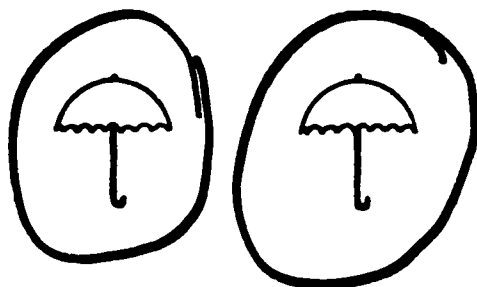
halves



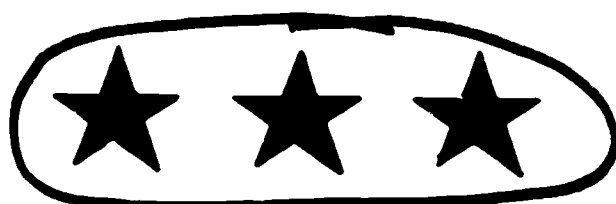
fourths



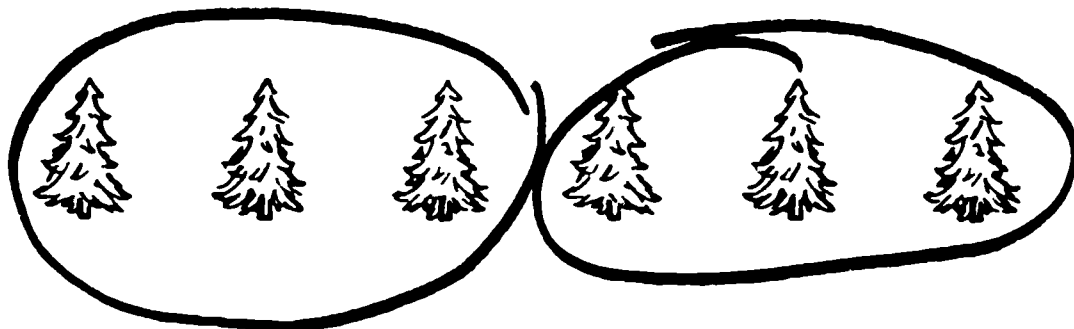
halves



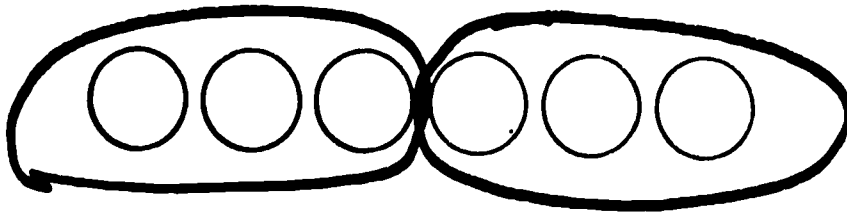
thirds



thirds



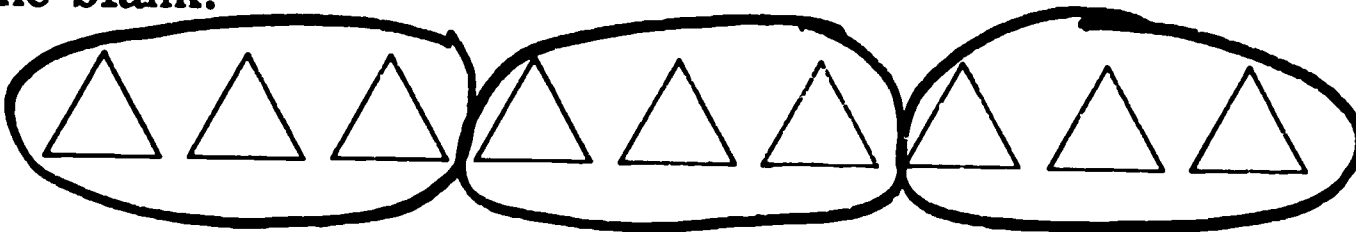
Directions: Divide the set of circles below into two equal parts. Circle each of the parts. Fill in the blank.



Each part is  $\frac{1}{2}$  of the total set.

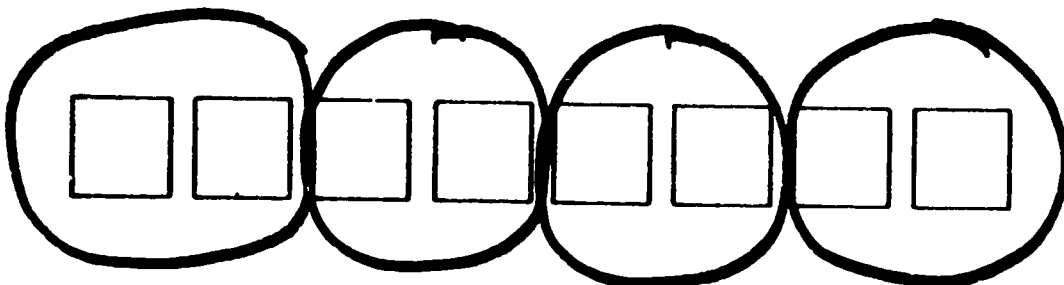
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

Directions: Divide the set of triangles below into three equal parts. Circle each of the parts. Fill in the blank.



Each part is  $\frac{1}{3}$  of the total set.

Directions: Divide the set of squares below into four equal parts. Circle each of the parts.

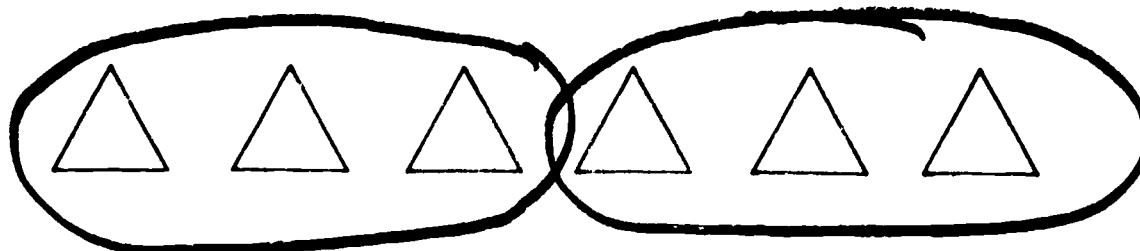


Directions: Circle one part of each set which is equal to the fraction shown.

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20
	0	0

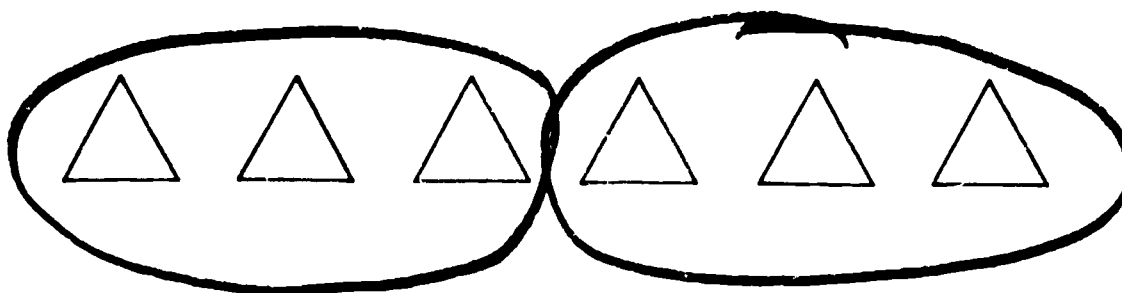
X

$\frac{1}{2}$



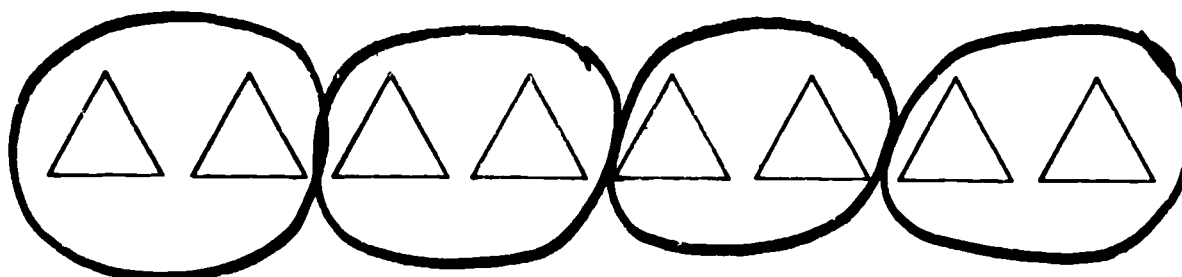
X

$\frac{1}{3}$



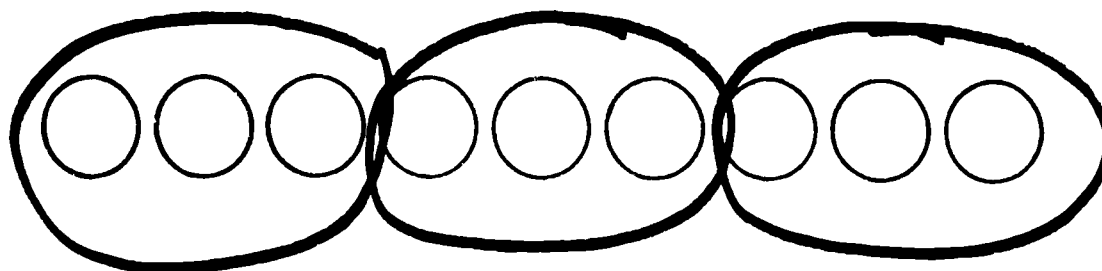
X

$\frac{1}{4}$



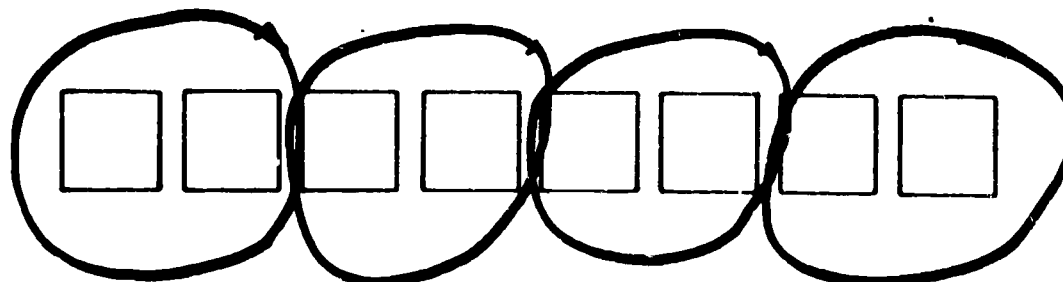
X

$\frac{1}{3}$



X

$\frac{1}{4}$



SCHOOL STAMP

U. S. 2-3

STUDENT NAME Joe Bowen

STUDENT NUMBER 0976

U. S. 4 5 6 7

GRADE 3 ROOM 107

U. S. 9

UNIT C-Frac.

U. S. 10 11 12

UNIT DATES

UNIT BEGAN 2/1 U. 13-16

UNIT ENDED U. 17-20

DAYS WORKED\* U. 21-22

SCHOOL CALENDAR

BEGAN U. 23-25

ENDED U. 26-28

Worked

SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	SCORE	MAX. POINTS	PART 1		PART 2				
S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////	SCORE	% S. 72-73	SCORE	% S. 74-75			
1													
2													
3													
4													
5													
6													
7													
8													
10													
11													
12													
13													
14													
15													
16													
17													
18													

The Aide will fill in the required data information on the Prescription Sheet:

- a. Student's name...JOE BOWEN
- b. Student's number...0976
- c. Grade... 3
- d. Room.....107
- e. Page number.....1
- f. Unit Began (date Pretest is corrected)...2/1

The Aide will fill in the required data information on the Prescription Sheet:

- Student's name... JOE BOWEN
- Student's number... 0976
- Grade... 3
- Room... 107
- Page number... 1
- Unit Began (date Pretest is corrected)... 2/1

The Aide will score and record Pretest information on the Prescription Sheet:

- Skill numbers
- Maximum points per skill
- Student's points per skill
- Percentages per skill
- Total points.....15
- Average score and percentage...51
- Date corrected.....2/1

PUNCH SAMPLE

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
X 1	5	4	80						
X 2	7	4	57						
X 3	5	2	40						
X 4	5	5	100						
X 5	7	0	0						
X									
X									
X									
X									
X									
X									
X									

PRE % POST %

U. 32-33 U. 34-35

80 95

TO 78



Based upon prototype originated by the Learning Research and Development Center.  
As field tested by Research for Better Schools, Inc.



individually prescribed instruction  
MATHEMATICS

published by  
**APPLETON-CENTURY-CROFTS**  
DIVISION OF MEREDITH PUBLISHING COMPANY  
440 Park Avenue South, New York, N. Y. 10016

NAME Joe Bowen

NUMBER 0976

CLASS 3

# MATHEMATICS UNIT TEST RECORD

NUMERATION (01)	Level 1-Pre-2	Post				Level 1-Pre-2	Post				Level 1-Pre-2	Post				Level 1-Pre-2	Post			
		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4
PLACED AT LEVEL	Max.Pts. Score Date	10/24	10/24	88	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1	10/1		
PLACE VALUE (02)	Level 1-Pre-2	B				Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C			
PLACED AT LEVEL	Max.Pts. Score Date	10/22	10/22	91	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15		
ADDITION (03)	Level 1-Pre-2	B				Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C			
PLACED AT LEVEL	Max.Pts. Score Date	10/22	10/22	91	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15		
SUBTRACTION (04)	Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C			
PLACED AT LEVEL	Max.Pts. Score Date	10/22	10/22	91	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15		
MULTIPLICATION (05)	Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C			
PLACED AT LEVEL	Max.Pts. Score Date	10/22	10/22	91	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15		
DIVISION (06)	Level 1-Pre-2	B				Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C			
PLACED AT LEVEL	Max.Pts. Score Date	10/22	10/22	91	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15	10/15		
COMBINATION OF PROCESSES (07)	Level 1-Pre-2	B				Level 1-Pre-2	C				Level 1-Pre-2	C				Level 1-Pre-2	C			

# CLASS 3

**UPDATE AND PLACE IN STUDENT FOLDER.**

You examine the Pretest starting on page 15. On your Prescription Sheet, you circle the skills in C-Frac. that are below 85% and require a prescription. You record these skill numbers next to C-FRAC. in unit space at the top of the Prescription Sheet.

You examine the entire Pretest and make a general statement about Joe's performance on the entire test.

Joe can: Identify figures divided into fourths and halves; circle sets to show equal fractional parts; match shaded figures and printed fractions.

Joe cannot: Identify figures divided into thirds; match shaded figures and circle sets to show  $1/3$ .

You analyze Joe's behavior:

- a. You describe behaviors which will facilitate learning: Joe reads well and can interpret written directions; he can work independently.

You state how your prescription will take these behaviors into account:

Peer tutoring and independent study will be prescribed.

- b. You describe behaviors which will hamper learning: Joe plays with manipulative devices.

You state how your prescription will take these behaviors into account:

Purposes of using manipulative aids will be explained to Joe and supervision will accompany a prescription for aids.

You select the first skill requiring a prescription. This is Skill 1.

You record the date, your initials, Skill # 1 and Read Student Page on line 2 of the Prescription Sheet on p. 44.

Before writing the prescription, you write what Joe must learn (p. 20 of STS booklet): Divide a whole object into 1/2's, 1/3's or 1/4's  
and identify objects divided into 1/2's, 1/3's or 1/4's.

You analyze Joe's work on Pretest Skill 1:

Joe can: Identify a figure that is divided into 1/2's and 1/4's

Joe cannot: Identify a figure that is divided into 1/3's when  
unusual divisions are presented.

You describe what Joe must learn for Skill 1: Divide objects into  
1/3's and identify objects that have been divided into 1/3's.



STUDENT NAME **Joe Bowen**

STUDENT NUMBER **0976**  
U. S. 4 5 6 7

SCHOOL STAMP

U. S. 2-3

GRADE **3**  
U. S. 9

ROOM **107**

UNIT **C-Frac. 1,2,3,5**  
U. S. 10 11 12

UNIT DATES			
UNIT BEGAN	<b>2/1</b>	U. 13-16	
UNIT ENDED		U. 17-20	
DAYS WORKED*		U. 21-22	

SCHOOL CALENDAR			
BEGAN		U. 23-25	
ENDED		U. 26-28	
Worked			

SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX.	PART 1		PART 2				
PRES.	INIT.	NO.	NO.	TECH CODES		POINTS	SCORE	%	SCORE	%			
S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////		S. 72-73		S. 74-75	////	S. 76-77	
2/1	MB	Prestest											
2/1	MB	1	Read Student Page										

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
▼			▼		▼		▼		▼
X ①	5	4	80						
X ②	7	4	57						
X ③	5	2	40						
X ④	5	5	100						
X ⑤	7	0	0						
X									
X									
X									
X									

This is a copy of the STS booklet for Skill 1.

You examine all the skill sheets and STS sheets (pp. 20-21) in the booklet to become familiar with materials for this skill.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 1, in particular), you decide to prescribe the following on 2/2:

<u>Page</u>	<u>Reason</u>
Student Page	Introduces skill; previews work
4	Introduces concept of 1/3
5	Dividing objects into 1/3's
6	Identifying objects divided into 1/3's
Fraction Pies 12	{ Manipulating objects divided into thirds with help of and supervision by Mark S.
Mark S. 02	

You estimate the time needed as: 2 class periods

After you recheck these three pages, you record the page numbers and the date on lines 3-7 of Joe's Prescription Sheet.



SCHOOL CODE

NAME \_\_\_\_\_

NUMBER \_\_\_\_\_ CLASS \_\_\_\_\_



and study presented in this book

**MATHEMATICS**

# Standard Teaching Sequence Booklet

**TEACHER'S EDITION**

**LEVEL C**

**FRACTIONS (08)**

**SKILL 1**

Based upon materials developed by The Mathematics Curriculum Staff,  
Learning Research and Development Center, University of Pittsburgh; Joseph  
I. Lipson, Ph.D., Director; Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome D. Kaplan, Ed.D., Teachers College, Columbia University

Appleton-Century-Crofts



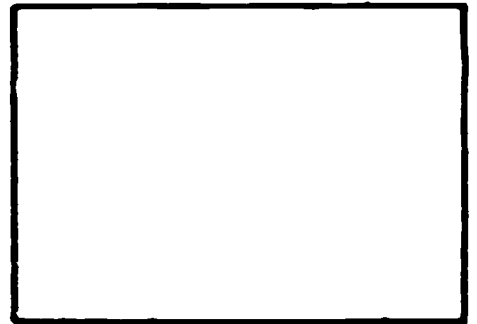
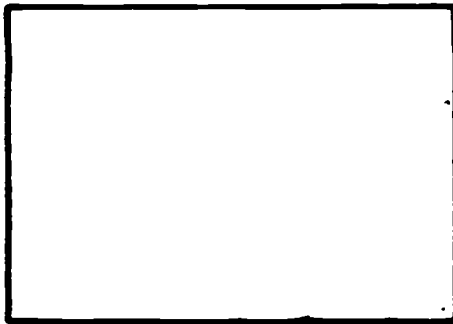
Division of Meredith Publishing Company

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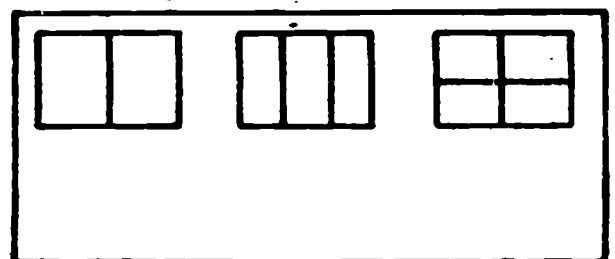
## DEVELOPMENTAL EDITION

## TO THE STUDENT

Divide the first box into halves, the second box into thirds and the last box into fourths.

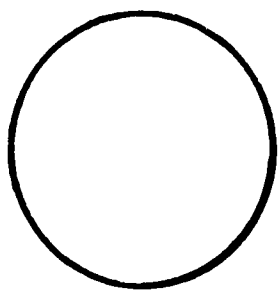


### Answers



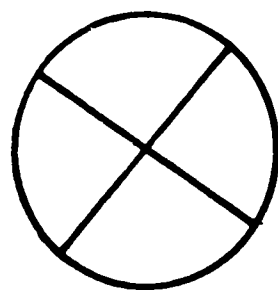
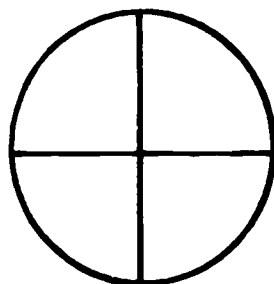


Fill in the blanks.



This is a circle.

This circle is divided into  
4 equal parts.



How many equal parts is this circle  
divided into? 4

When an object is divided into 4 equal parts, we say the  
object is divided into fourths.

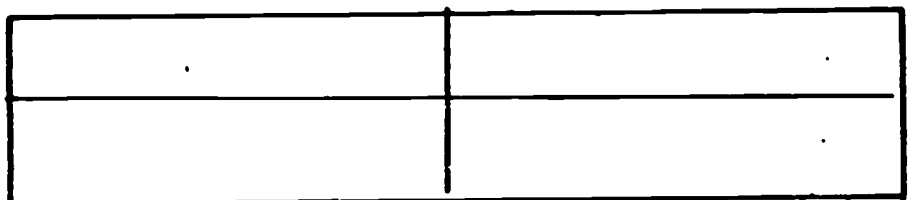
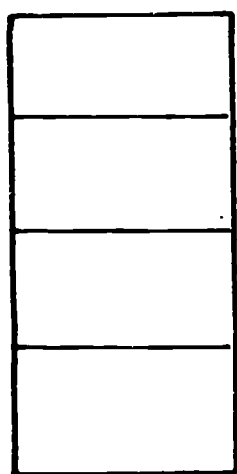
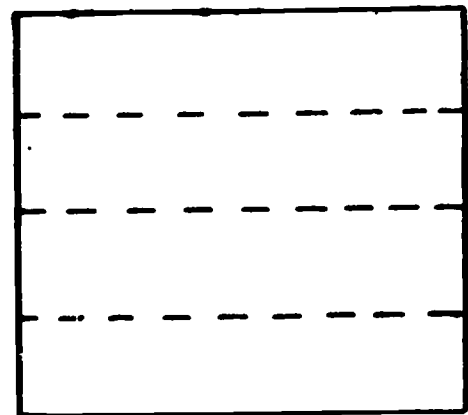
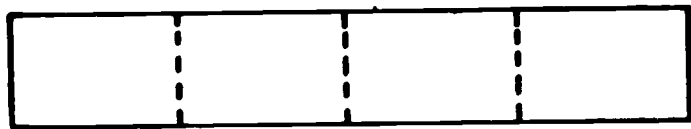


This box is divided into 4  
equal parts or into fourths.

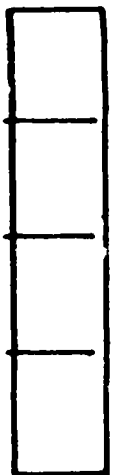
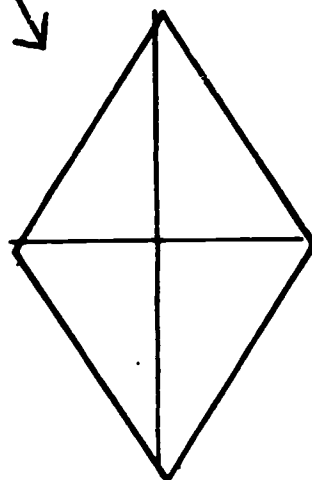
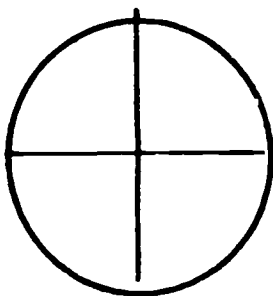
For extra practice, do Page 12.

When an object is divided into 4 equal parts, it is divided into fourths.

Divide the objects below into fourths.



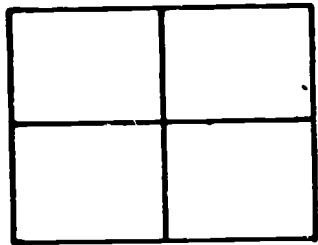
(any fourths permitted)



All these objects are now divided into 4 equal parts, or into fourths.

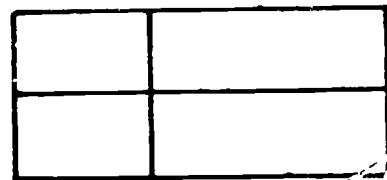
For extra practice, do Page 13.

This box is divided into fourths.

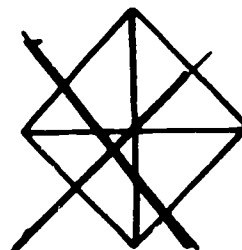
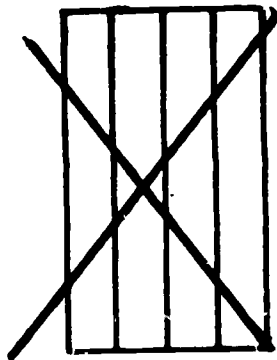
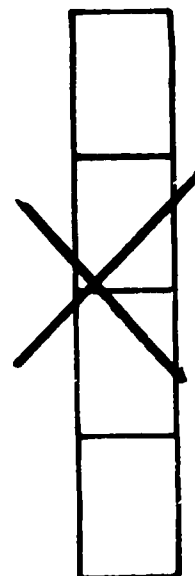
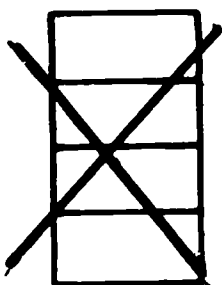
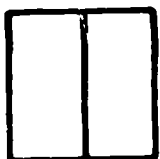
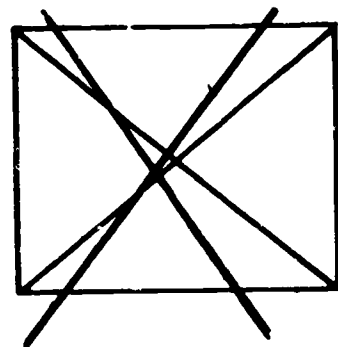
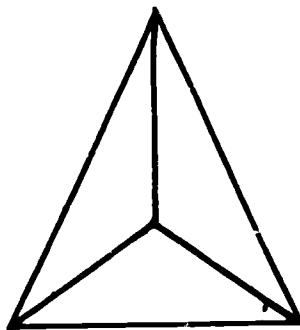
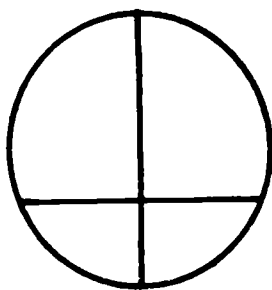
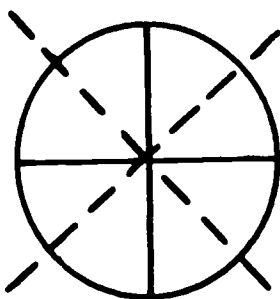


This box is not divided into fourths. Why not?

It is not divided equally into 4 parts. (Or any similar answer.)

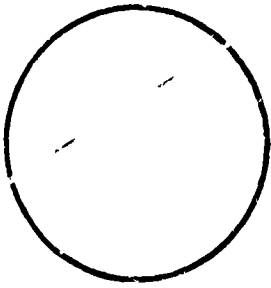


Put an X on the figures that are divided into fourths.



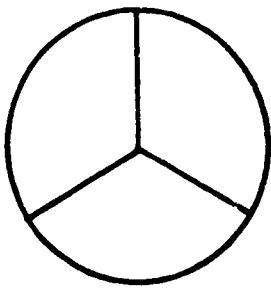
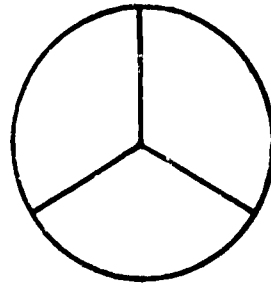
For extra practice, do Page 14.

Fill in the blanks.



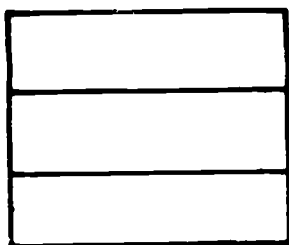
This is a circle.

This circle is divided into  
3 equal parts.



How many equal parts is this circle  
divided into? 3

When an object is divided into 3 equal parts, we say the  
object is divided into thirds.

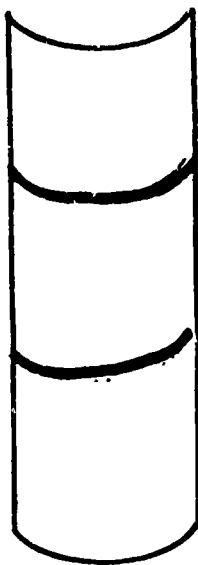
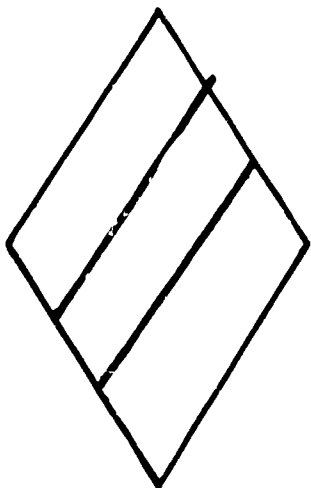
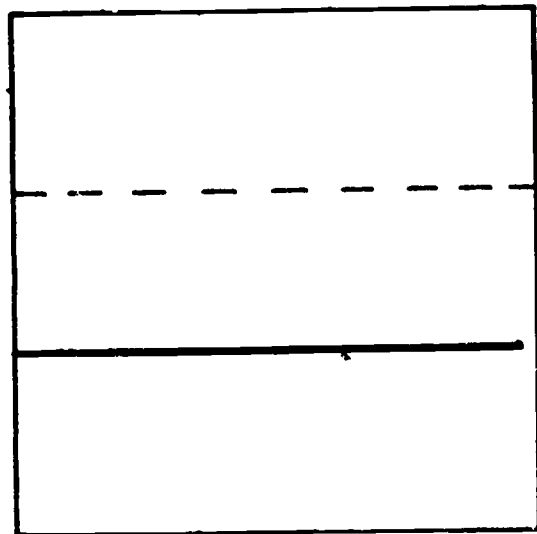


This box is divided into 3  
equal parts, or into thirds

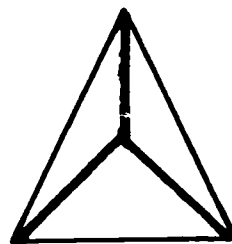
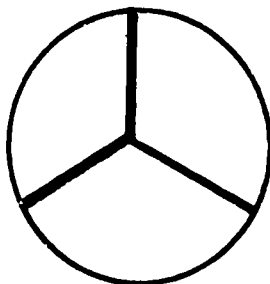
For extra practice, do Page 15.

When an object is divided into 3 equal parts, it is divided into thirds.

Divide the objects below into thirds.

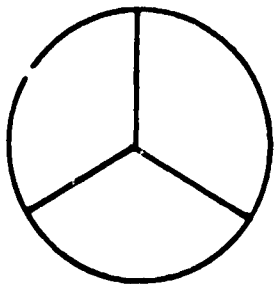


Scoring note: Accept (any equal division into 3 parts.)



All these objects are now divided into 3 equal parts, or into thirds

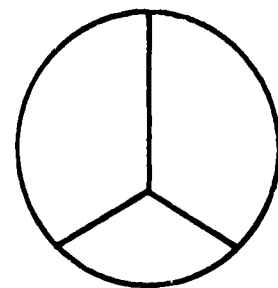
For extra practice, do Page 16.



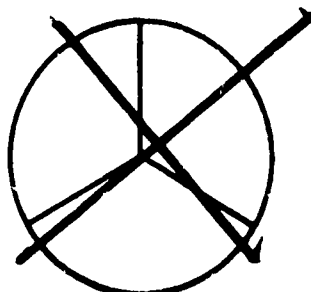
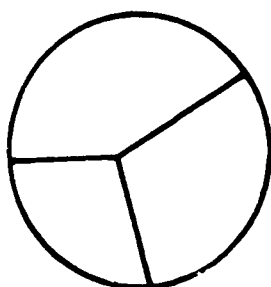
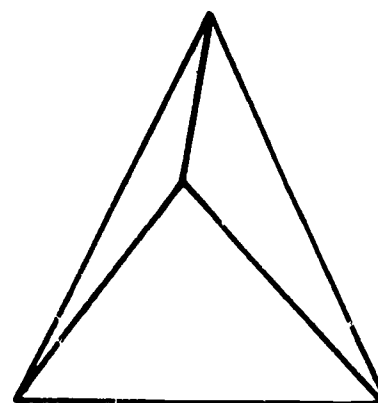
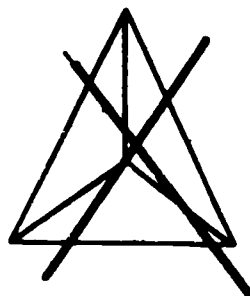
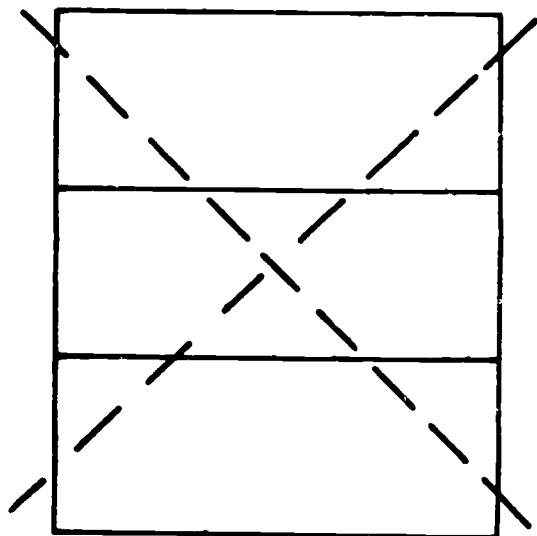
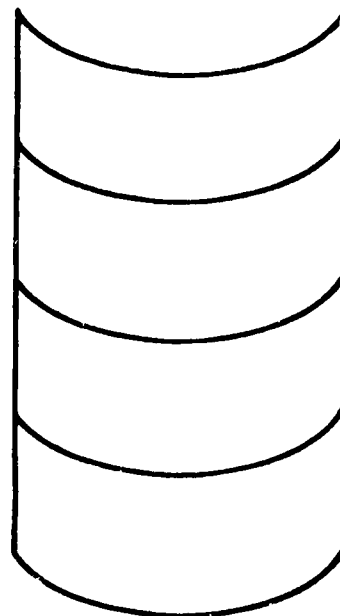
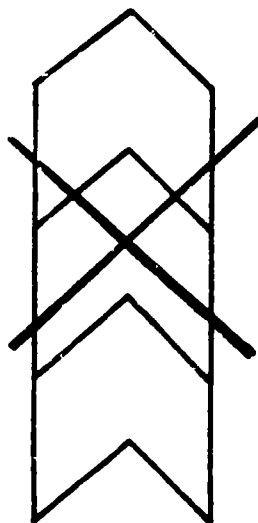
This circle is divided into thirds

This circle is not divided into thirds. Why not?

Because it is not divided into 3 equal parts (or similar answer)



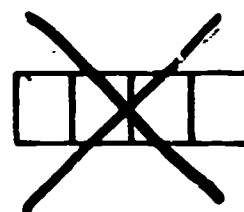
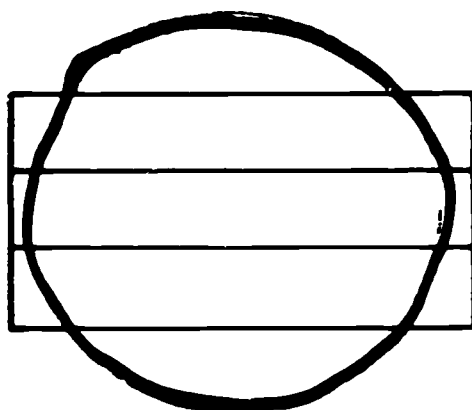
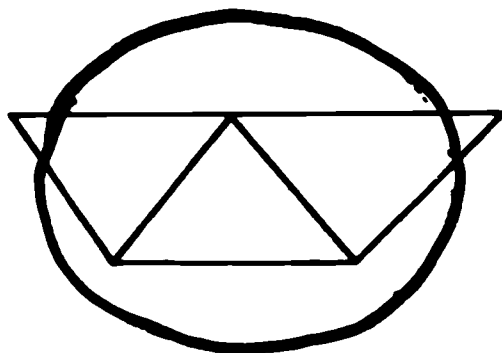
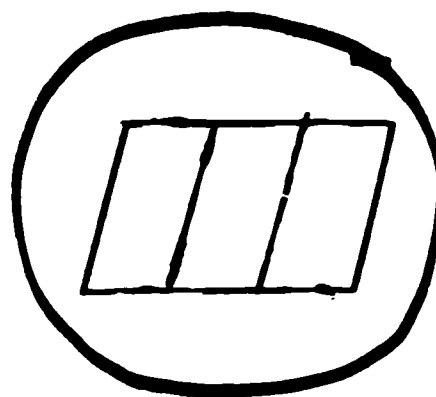
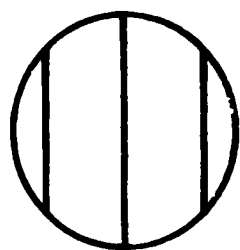
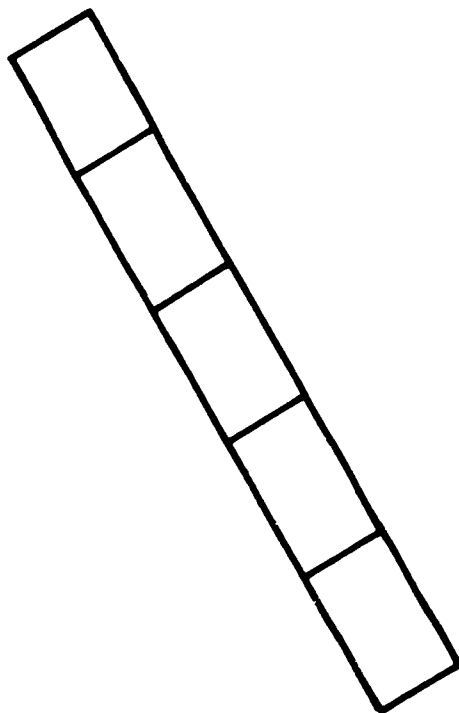
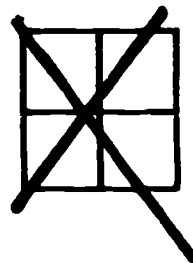
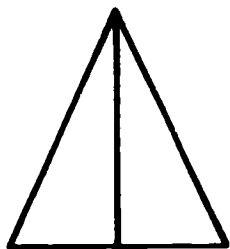
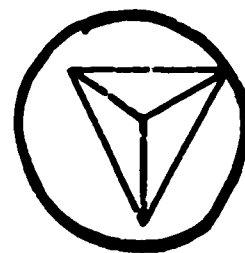
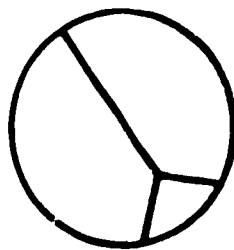
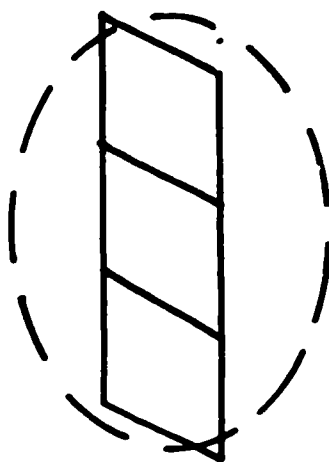
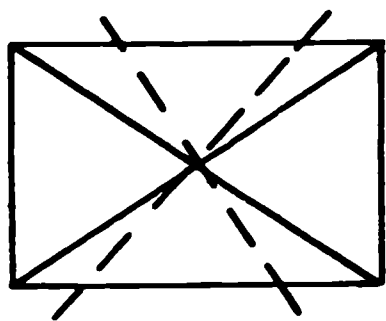
Put an X on the figures that are divided into thirds.



For extra practice, do Page 17.

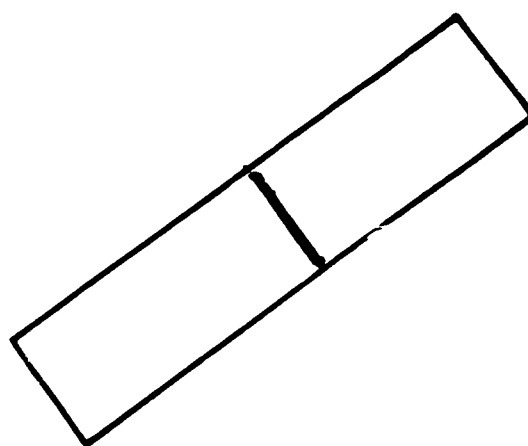
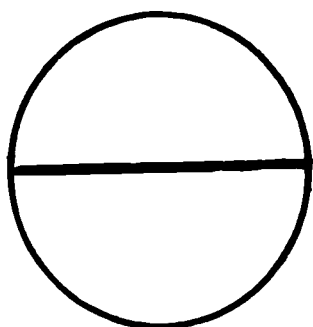
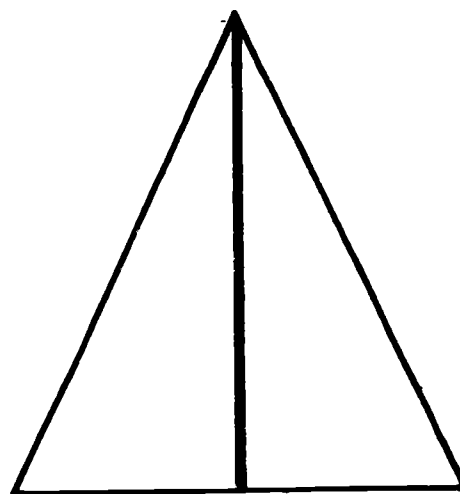
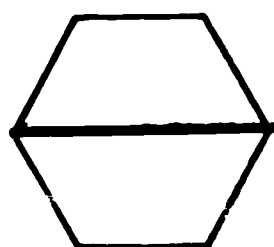
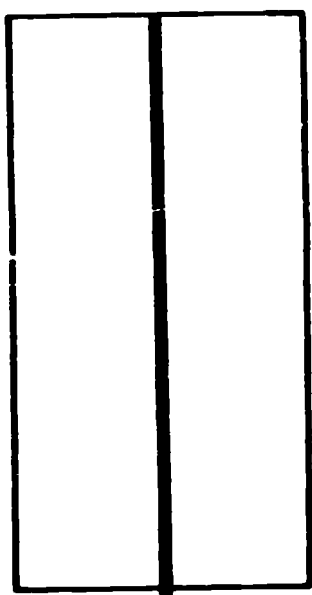
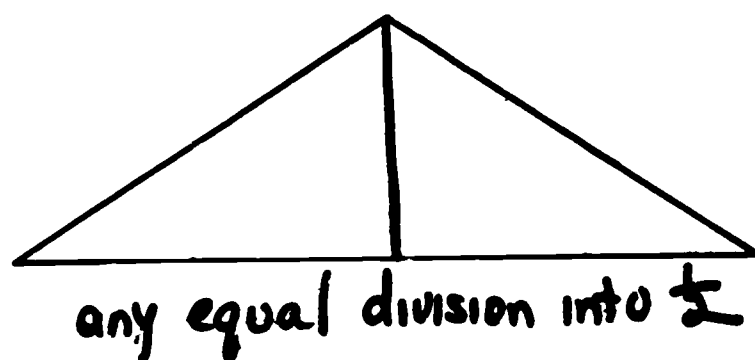
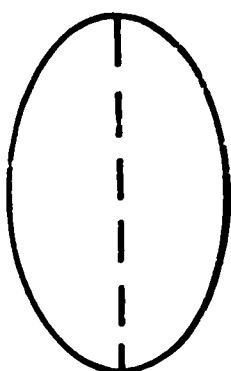
Put an X on all the shapes that are divided into fourths.

Put a circle around all the shapes that are divided into thirds.



When an object is divided into 2 equal parts, we say it is divided into halves.

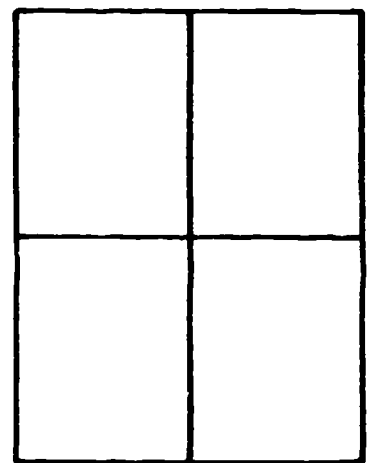
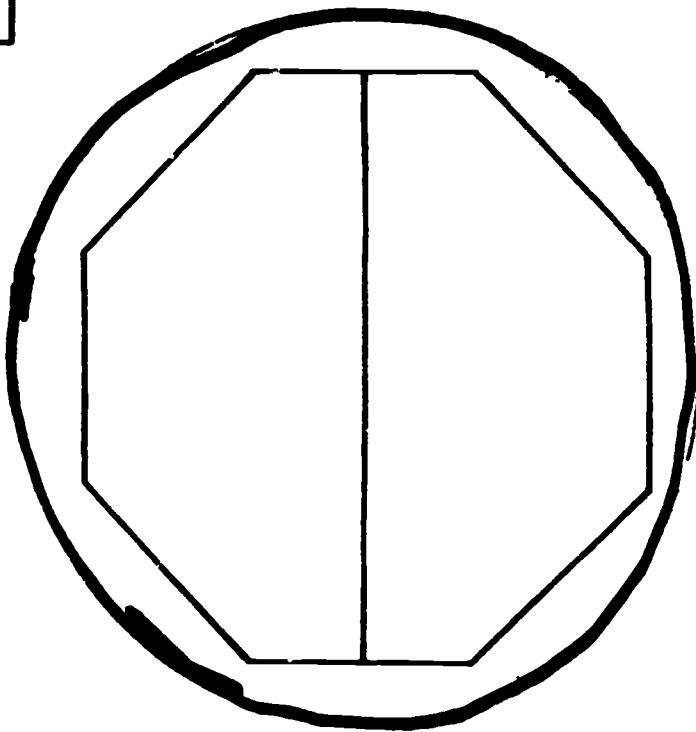
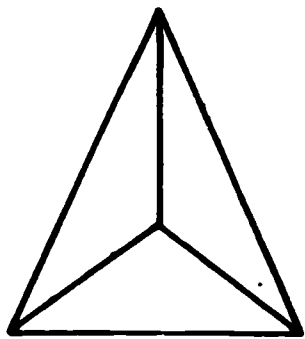
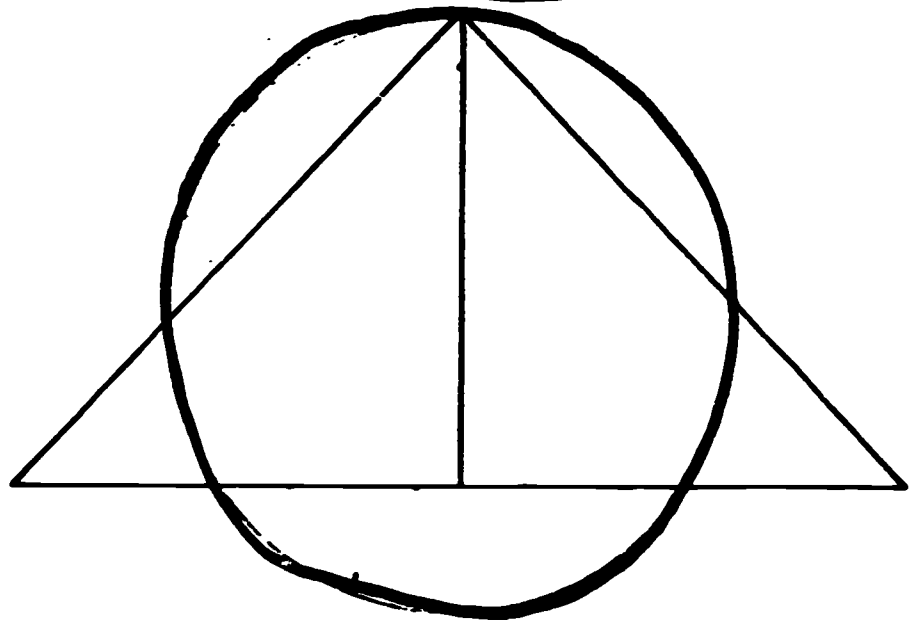
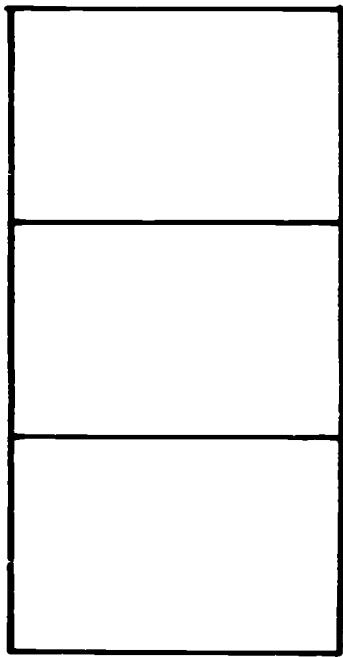
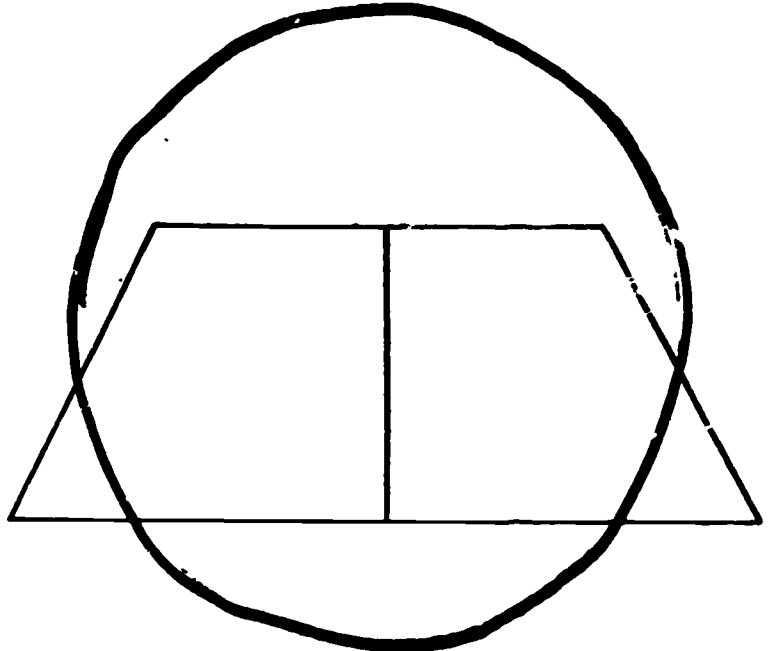
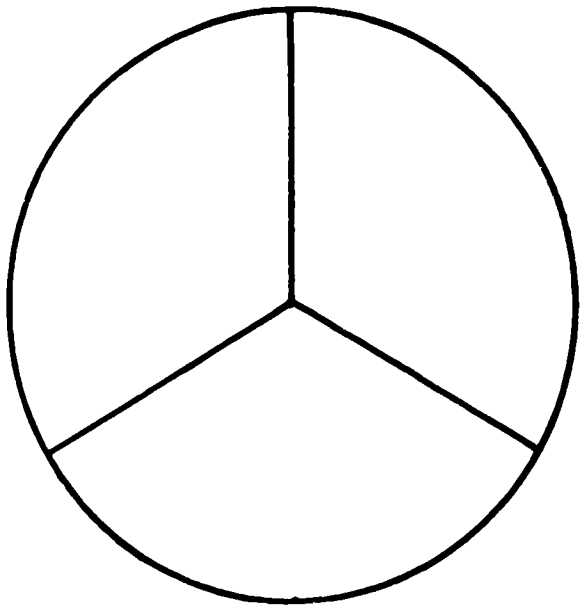
Divide these objects into halves.



All these objects are now divided into halves

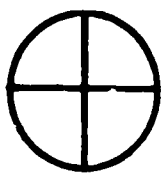


Circle the objects which are divided into halves.



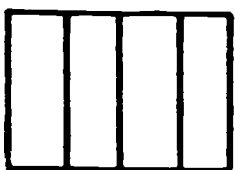
How is the picture divided?

Draw a circle around the correct answer.

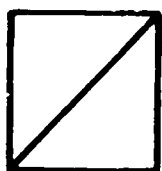


is divided into  
thirds          halves

( fourths )



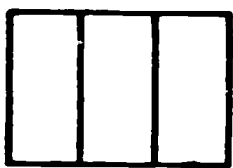
is divided into  
**fourths**          thirds          halves



is divided into  
**halves**          thirds          fourths



is divided into  
**halves**          thirds          fourths



is divided into  
fourths          **thirds**          halves

For extra practice, do Page 18.

CET I

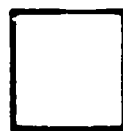
Divide the figure into the parts name below each figure.



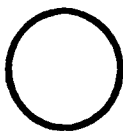
halves



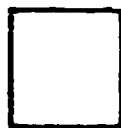
thirds



fourths



fourths

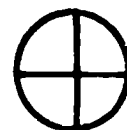
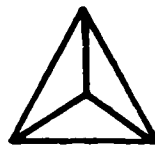
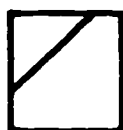


halves

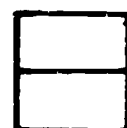
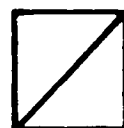
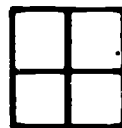
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	17	100%
	NO. OF PTS.	%
	16	94
	15	88
	14	82
	13	76
	12	71
	11	65
	10	59
	9	53
	8	47
	7	41
	6	35
	5	29
	4	24
	3	18
	2	12
	1	6

Put an X on each figure in the row that is divided the way the word says.

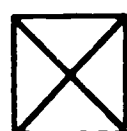
thirds



halves



fourths



Circle the fraction that tells how much of each figure is shaded.



$\frac{1}{3}$     $\frac{1}{2}$     $\frac{1}{4}$



$\frac{1}{2}$     $\frac{1}{3}$     $\frac{1}{4}$

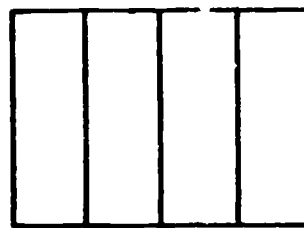


$\frac{1}{2}$     $\frac{1}{3}$     $\frac{1}{4}$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	3	100%
	NO. OF PTS.	%
	2	67
	1	33

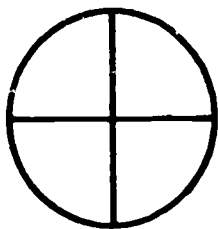
Fill in the blanks.

This box is divided into fourths.



It is divided into 4 equal parts.

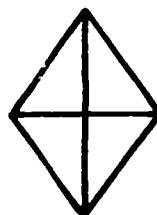
If an object is divided into 4 equal parts, we say it is divided into fourths.



How many equal parts is this circle divided into? 4

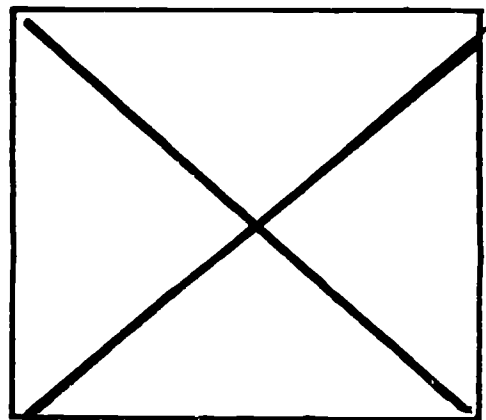
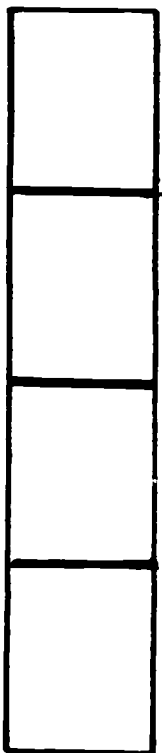
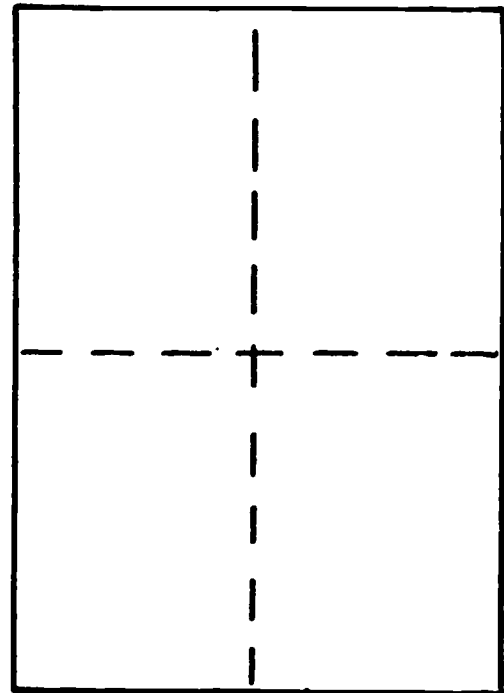
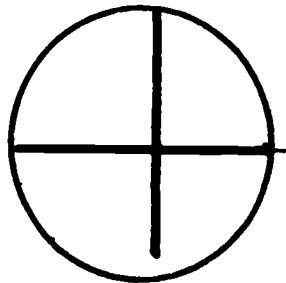
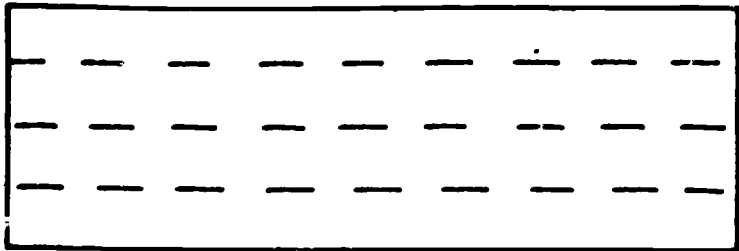
Therefore, we say the circle is divided into fourths.

Is this figure divided into fourths? yes



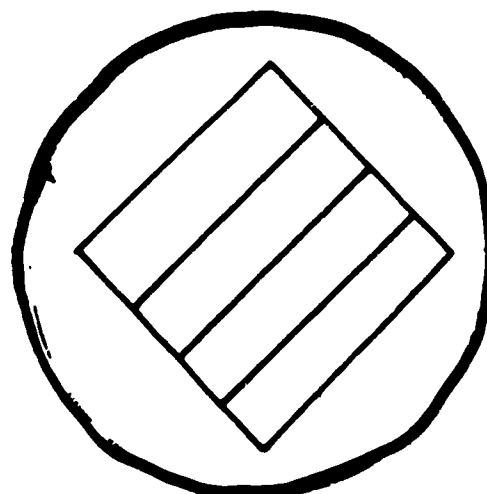
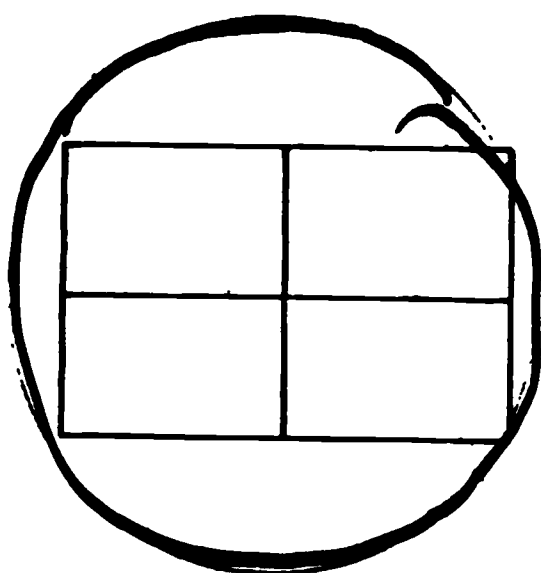
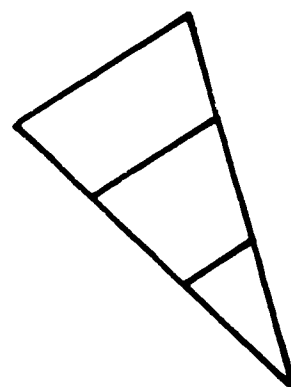
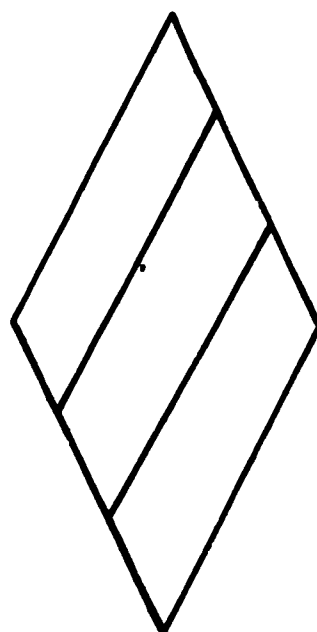
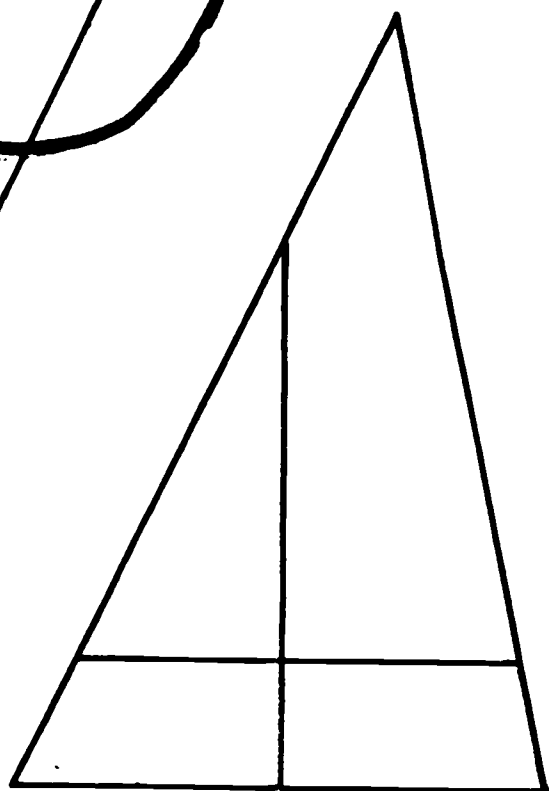
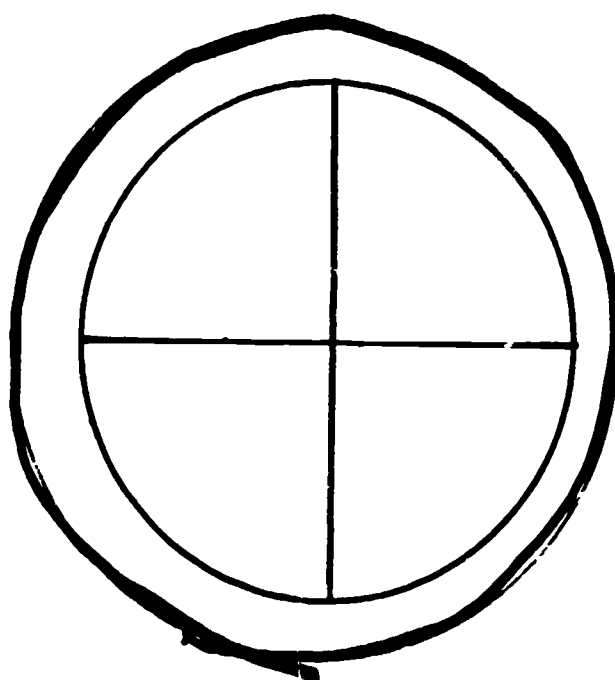
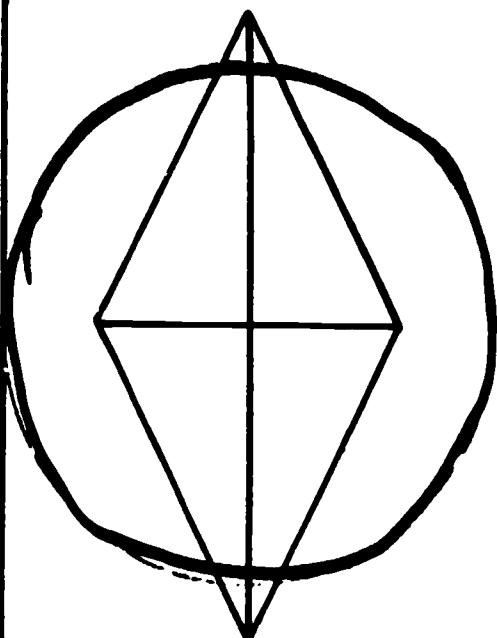
When an object is divided into 4 equal parts, it is divided into fourths.

Divide the objects below into fourths.



(any equal division into fourths.)

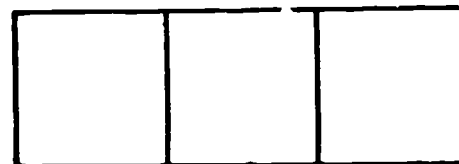
Put a circle around all the objects that are divided into fourths.



Fill in the blanks.

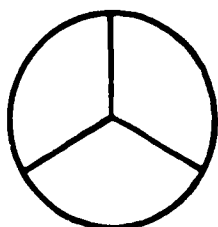
How many pieces is the box divided into?

3



Are all the pieces equal? yes

When an object is divided into 3 equal parts, we say it is divided into thirds.



Is this circle divided into 3 equal parts?

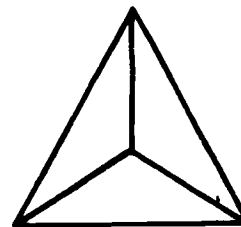
yes

Is it divided into thirds? yes

Is this triangle divided into 3 equal parts?

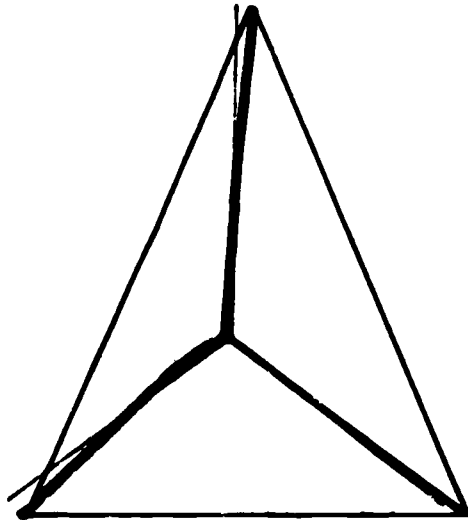
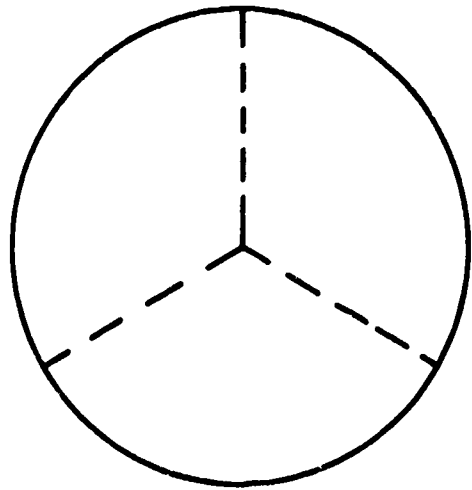
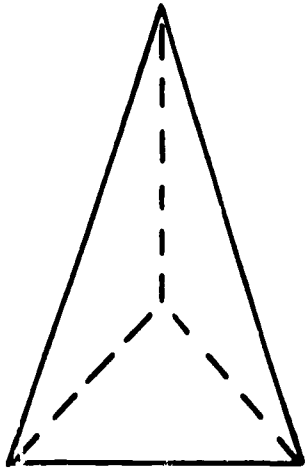
yes

The triangle is divided into three thirds.

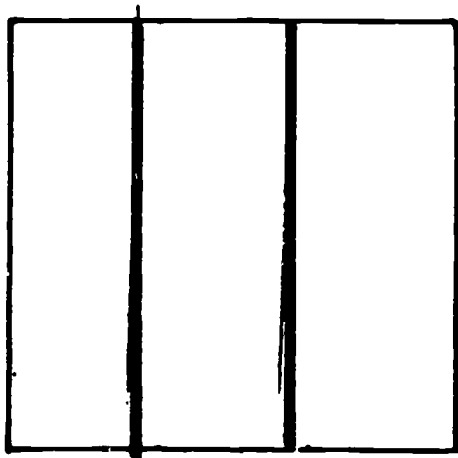


When an object is divided into 3 equal parts, it is divided into thirds.

Divide these objects into thirds.

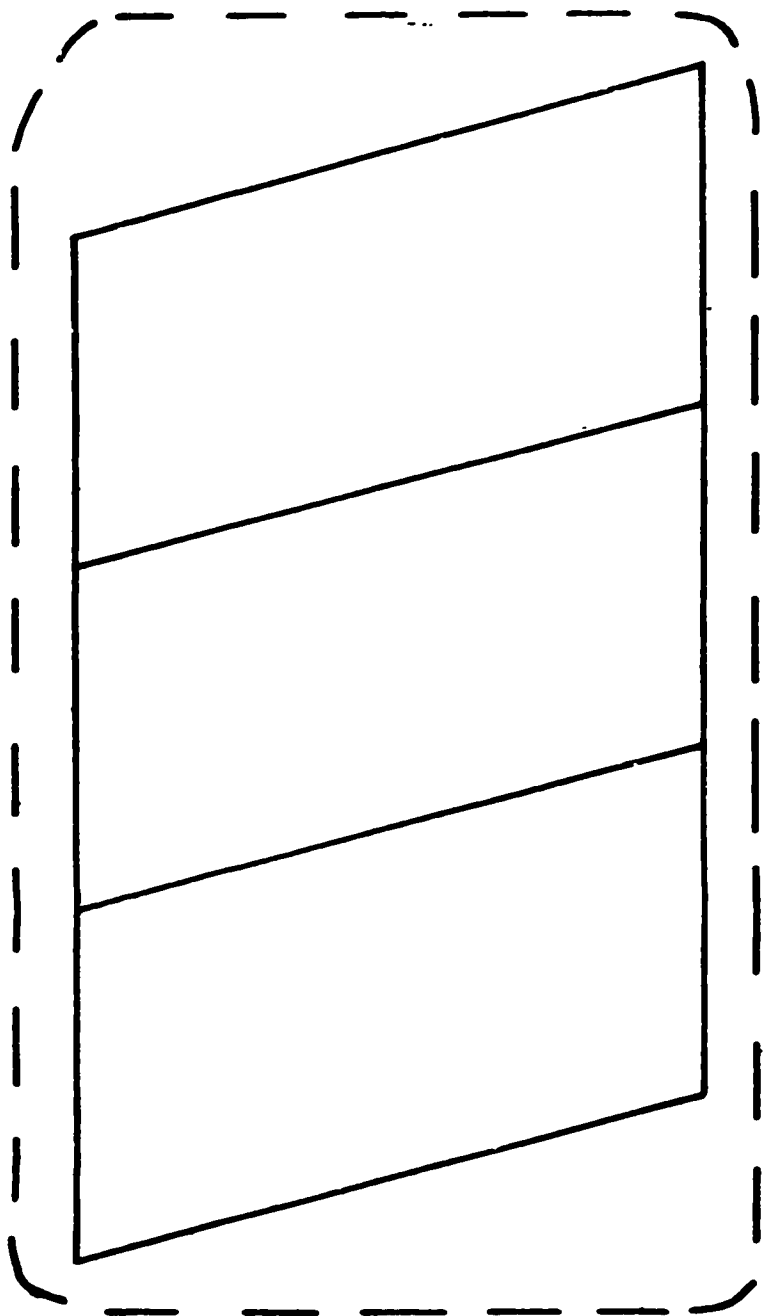
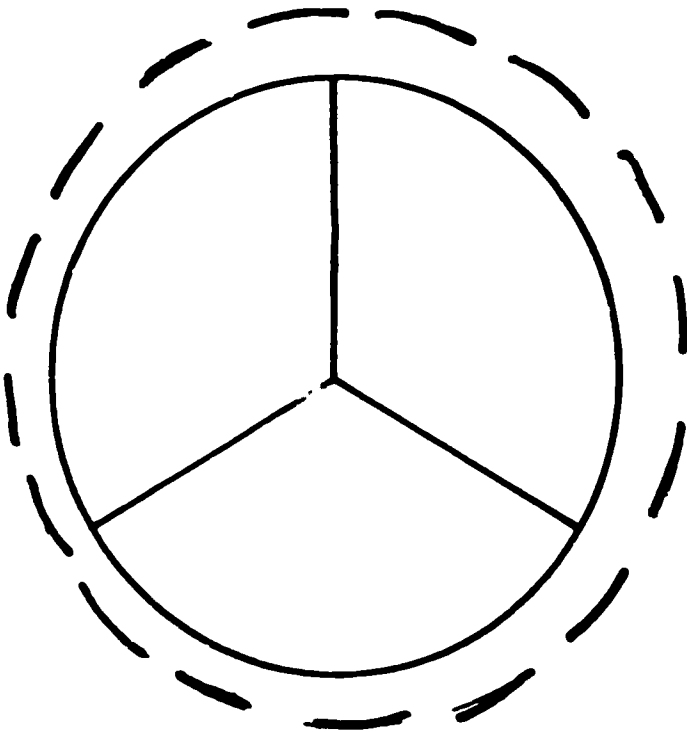
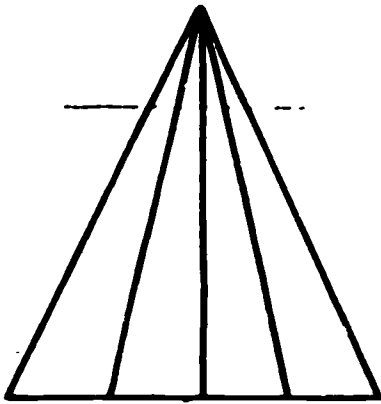
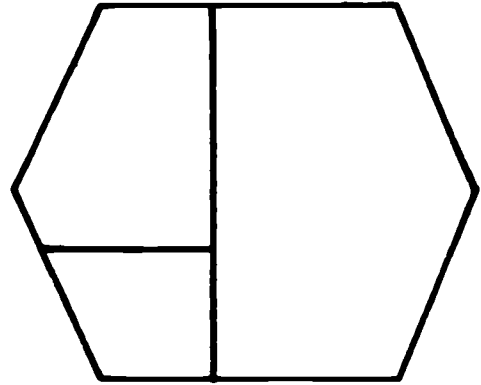
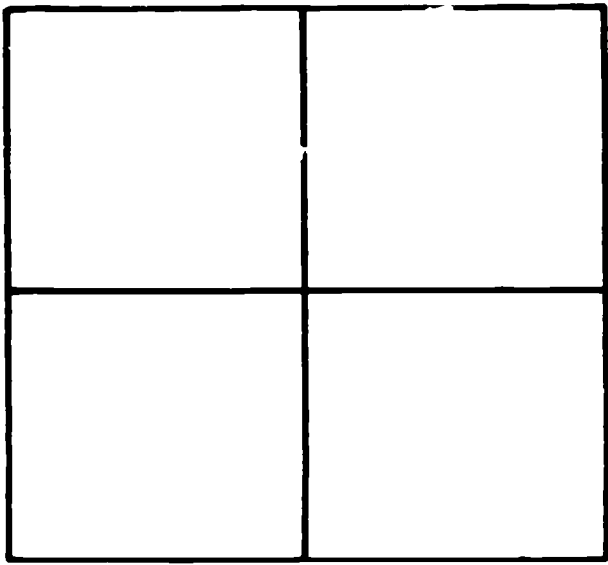


Scoring note: Accept (any equal division into thirds.)

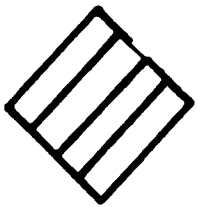




Circle the objects which are divided into thirds.



Draw a circle around the word which tells how the object is divided.

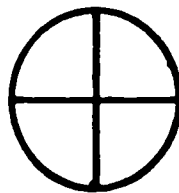


is divided into

halves

thirds

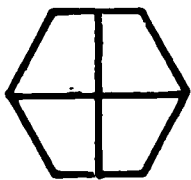
fourths



halves

thirds

fourths



halves

thirds

fourths



halves

thirds

fourths



halves

thirds

fourths



halves

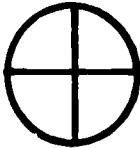
thirds


fourths


CET II


Put an X on each figure in the row that is divided the way the word says.

fourths







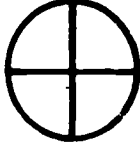





thirds




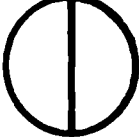








halves



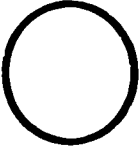




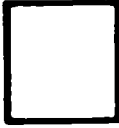


C I R C L E  C O R R E C T  B O X	TL. PTS.	
	17	100%
	NO. OF PTS.	%
	16	94
	15	88
	14	82
	13	76
	12	71
	11	65
	10	59
	9	53
	8	47
	7	41
	6	35
	5	29
	4	24
	3	18
	2	12
	1	6

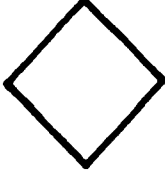
Divide the figure into the parts named by the word under each figure.



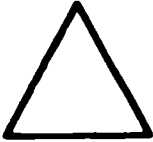
thirds



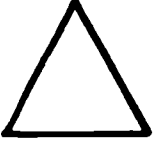
halves



fourths

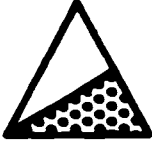



halves




thirds

Circle the fraction that tells how much of each figure is shaded.







$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{4}$

$\frac{1}{4}$

$\frac{1}{3}$

$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{2}$

$\frac{1}{4}$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	3	100%
	NO. OF PTS.	%
	2	67
	1	33

LEVEL C, FRACTIONS, SKILL 1

**OBJECTIVE:** Divides a whole object into halves, thirds, or fourths, or identifies an object divided into halves, thirds, or fourths.

STANDARD TEACHING SEQUENCE

Pages	Supplementary Material
1. Says that an object is divided into 4 equal parts or into <u>fourths</u> .	12
2. Divides objects into fourths.	13
3. Puts an X on figures that are divided into fourths, rejecting all figures not divided into 4 equal parts.	14
4. Says that an object is divided into <u>3</u> equal parts or into <u>thirds</u> .	15
5. Divides objects into thirds.	16
6. Puts an X on figures that are divided into thirds, rejecting all figures not divided into 3 equal parts.	17
7. Puts an X on all the shapes that are divided into fourths. Puts a circle around all the shapes that are divided into thirds. Rejects shapes that fit in neither category.	
8. Divides objects into halves.	
9. Circles the objects which are divided into halves.	
10. Circles the word which tells whether a given object is divided into halves, thirds, or fourths.	18
11. CET I.	
CET II.	19

Circle pages that are to be done.

## Standard Teaching Sequence, Con't

1967 - 68

### Teaching Aids:

Fraction pies  
Ideal fraction wheel  
Instructo flannel board  
 Fractional parts - squares - circles  
 Teacher's fraction kit - flannel board  
Ideal Fractions Made Easy  
Creative Playthings Simple Fractions Kit  
Milton Bradley fraction parts on a board

### Textbook Resources:

Book	Teaching Pages	Practice Pages
Harcourt, Brace & World, 1965 <u>Two By Two</u> (Grade 2)	58	

These are the three skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Write about the concept of 1/3's.

Joe cannot: Identify objects divided into 1/3's when unusual shapes are presented.

You describe how Joe worked with this prescription: He benefited from the peer tutoring and worked well independently, too.

Based on your analysis of Joe's work, you decide to:

- ☐ Revise original prescription
- ☒ Extend prescription
- ☐ Assign a CET

Why? Joe must learn to identify multi-shaped objects that are divided into 1/3's.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 1, in particular) and on these skill sheets, you decide to prescribe the following on 2/4:

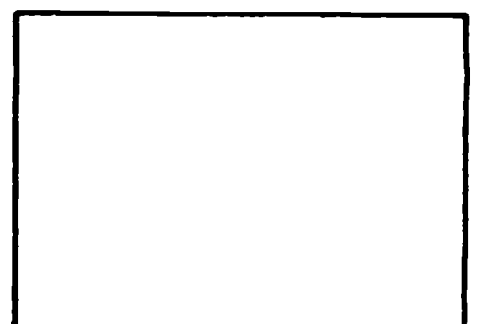
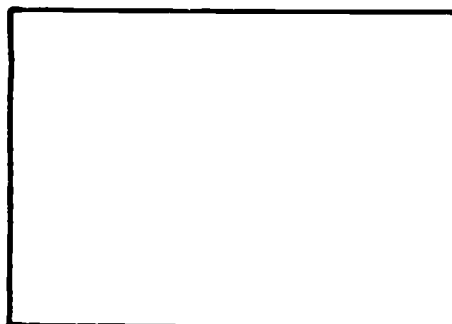
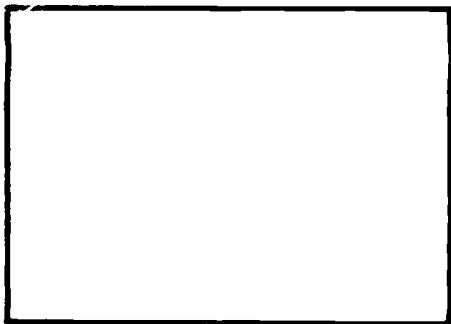
<u>Page</u>	<u>Reason</u>
16	Divides objects into thirds
17	Identifies multi-shaped objects that are divided into thirds

You estimate the time needed as: 30 minutes maximum

After you recheck these two pages, you record the page numbers and the date on lines 8-9 of Joe's Prescription Sheet.

## TO THE STUDENT

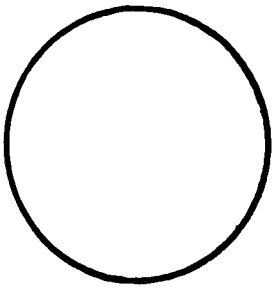
Divide the first box into halves, the second box into thirds and the last box into fourths.



### Answers

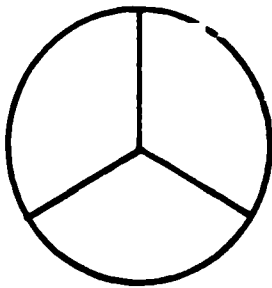
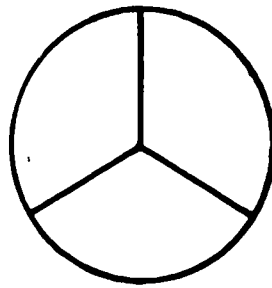


Fill in the blanks.



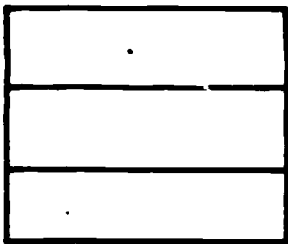
This is a circle.

This circle is divided into  
3 equal parts.



How many equal parts is this circle  
divided into? 3

When an object is divided into 3 equal parts, we say the  
object is divided into thirds.



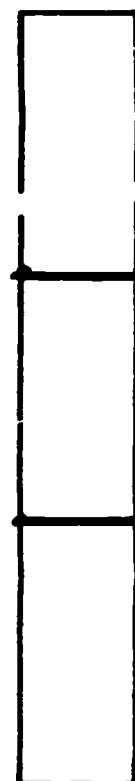
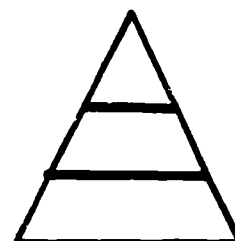
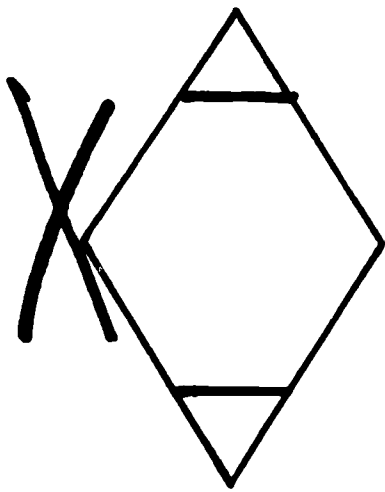
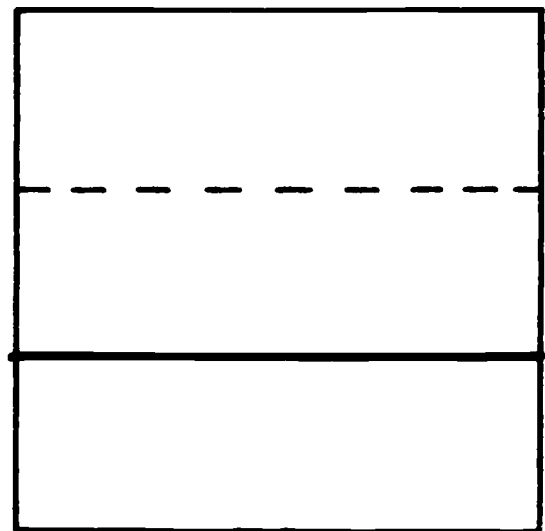
This box is divided into 3  
equal parts, or into thirds.

For extra practice, do Page 15.



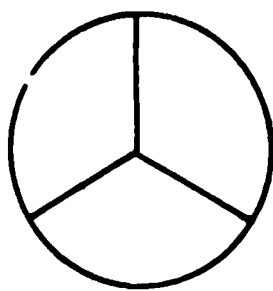
When an object is divided into 3 equal parts, it is divided into thirds.

Divide the objects below into thirds.



All these objects are now divided into 3 equal parts, or into thirds.

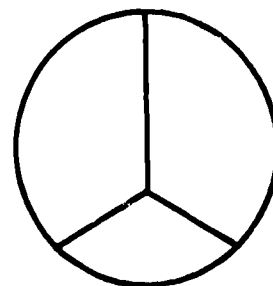
For extra practice, do Page 16.



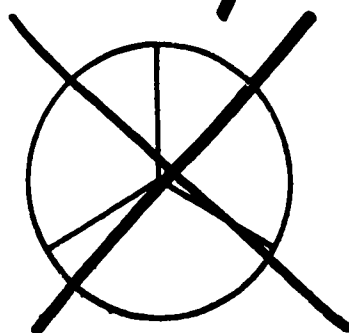
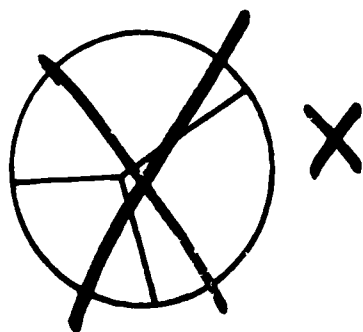
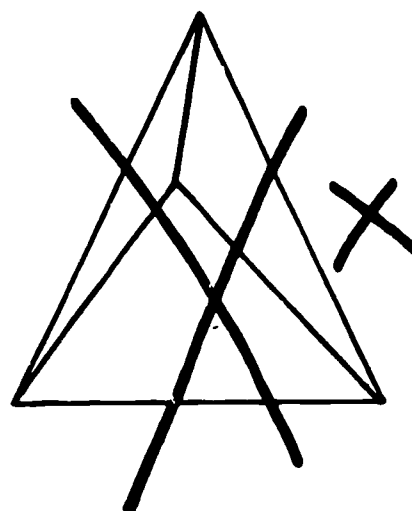
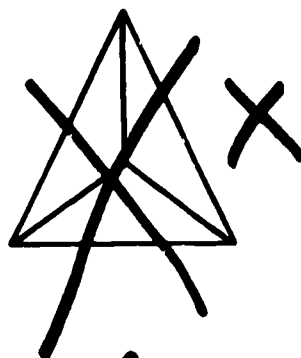
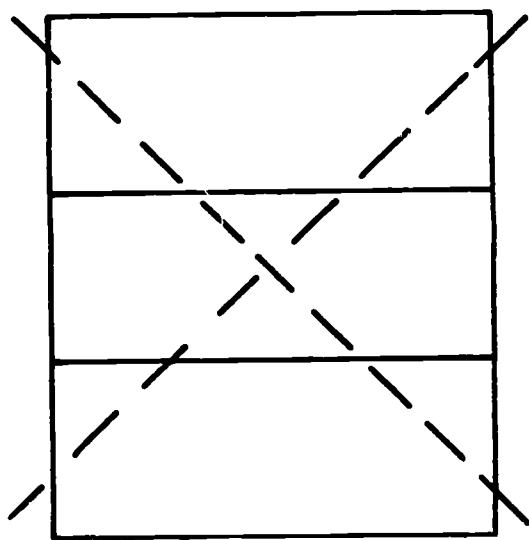
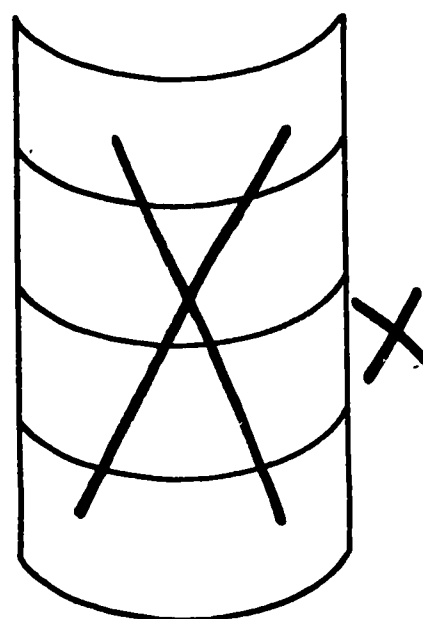
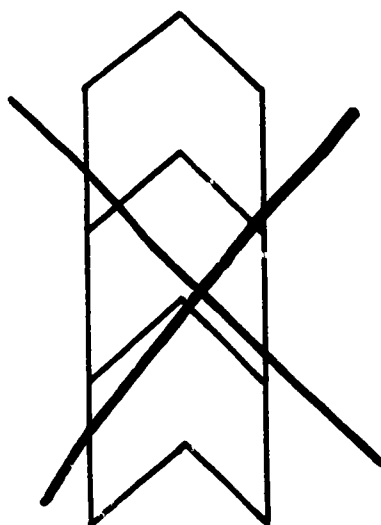
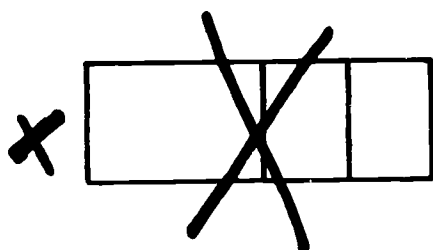
This circle is divided into thirds.

This circle is not divided into thirds. Why not?

Parts are not equal.



Put an X on the figures that are divided into thirds.



For extra practice, do Page 17.

These are the two skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Identify objects that are divided into 1/3's; divide objects into 1/3's.

Joe cannot: - - -

You describe how Joe worked with this prescription: Joe worked quickly, independently.

Based on your analysis of Joe's work, you decide to:

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☒ Assign entire CET for skill 1.

Why? His work on skill sheets indicates mastery of skill 1.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 1, in particular) and on these skill sheets, you decide to prescribe the following on 2/4:

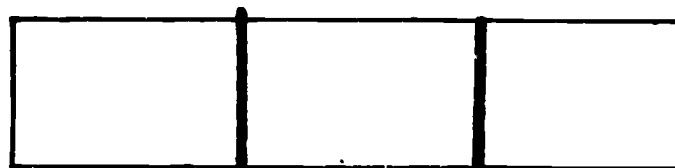
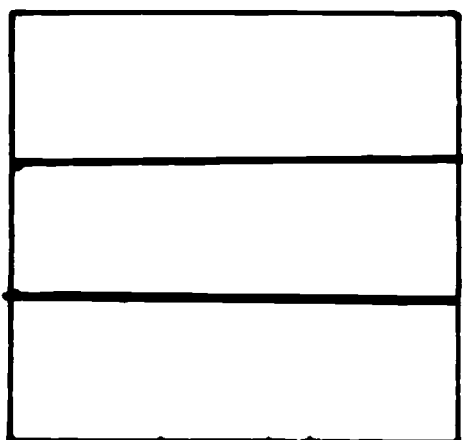
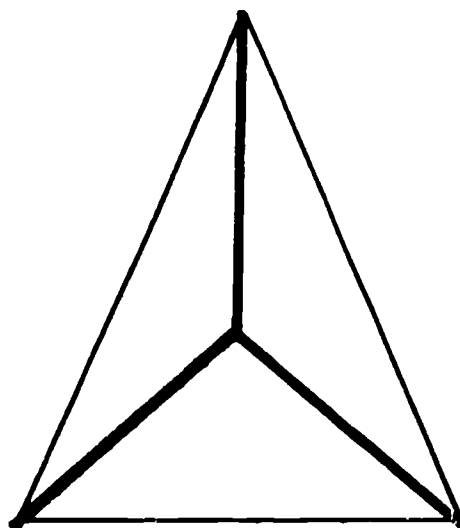
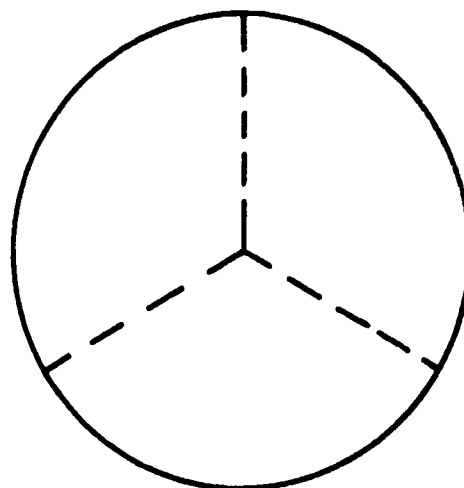
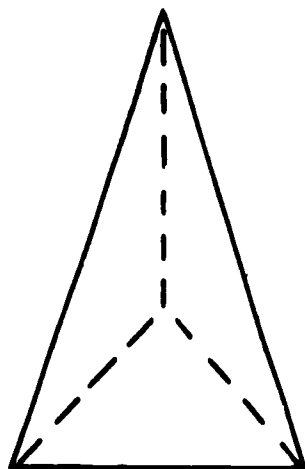
<u>Page</u>	<u>Reason</u>
11	CET to test mastery of skill 1

You estimate the time needed as: 20 minutes maximum

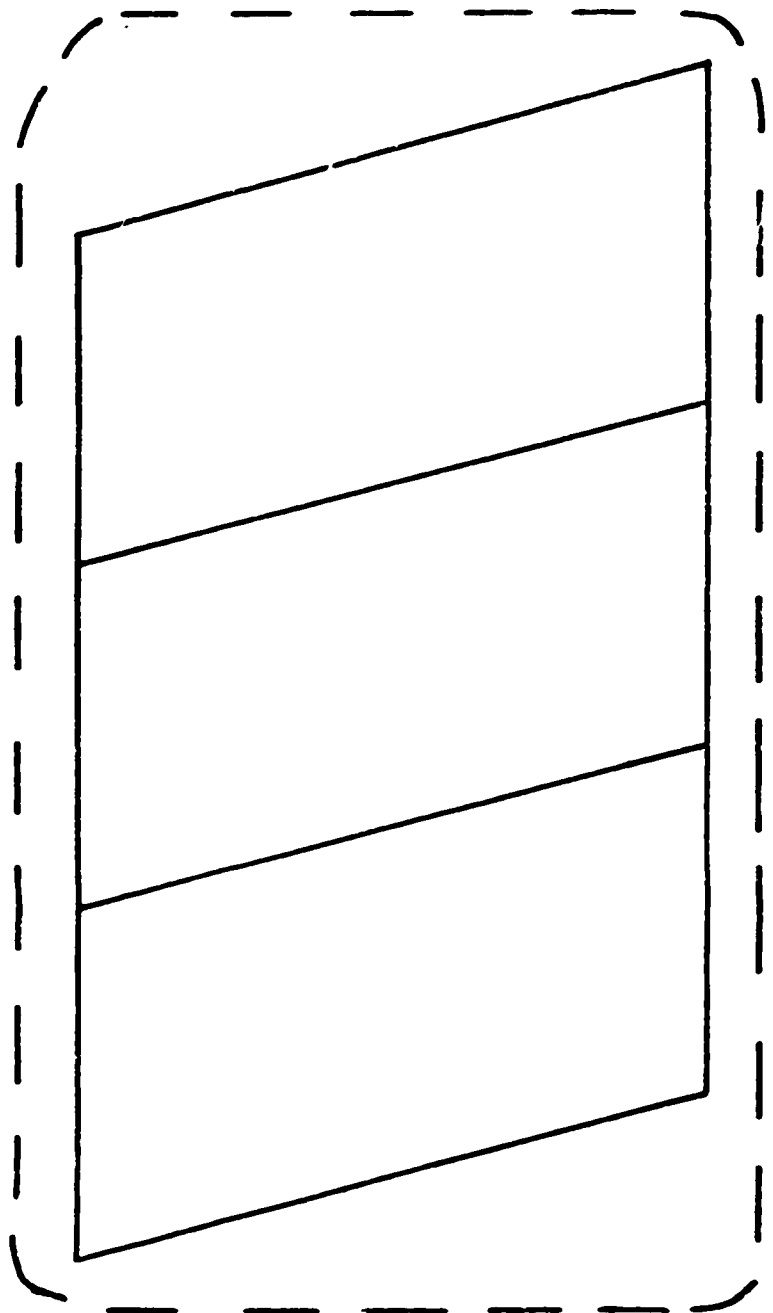
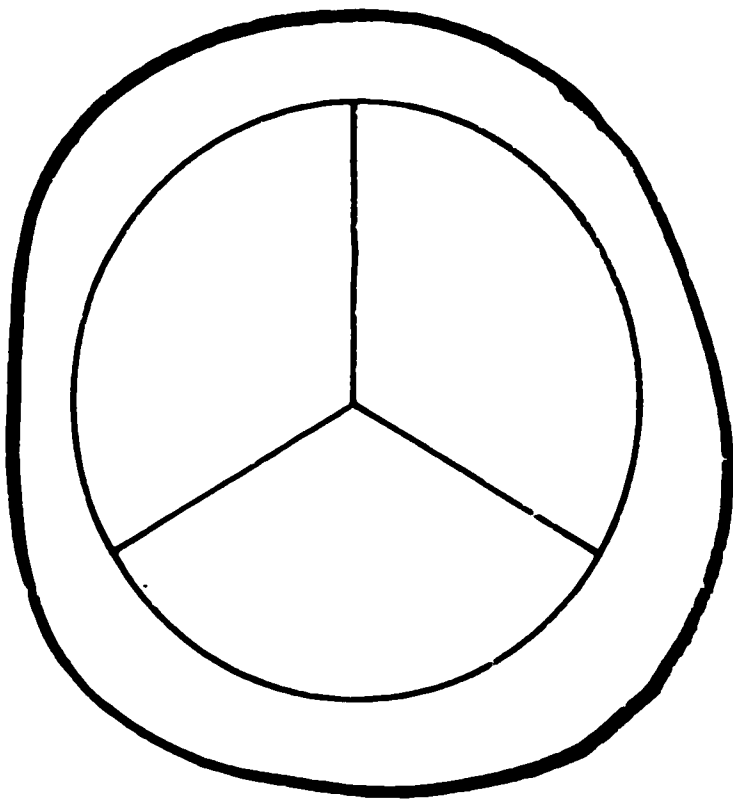
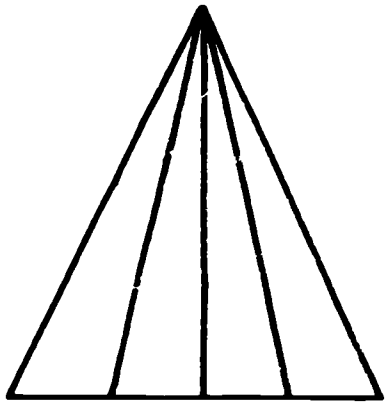
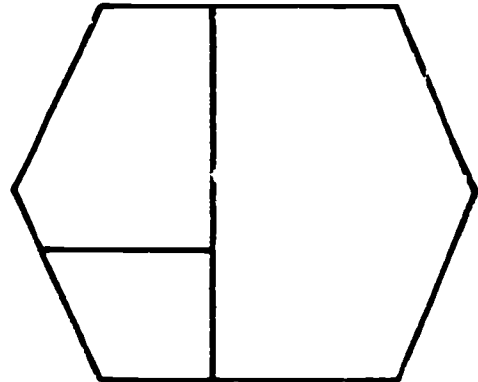
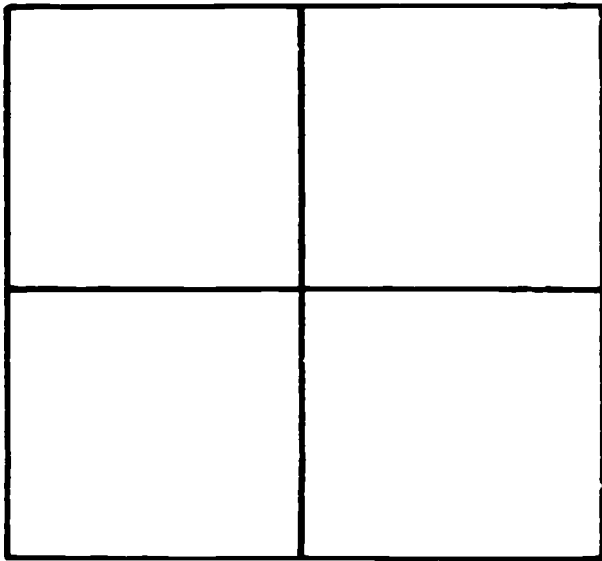
After you recheck this CET, you record the page number and the date on line 10 of Joe's Prescription Sheet.

When an object is divided into 3 equal parts, it is divided into thirds.

Divide these objects into thirds.



Circle the objects which are divided into thirds.



This is the CET completed by Joe and corrected by the Aide.

You record (in the role of Aide) the scores on the Prescription Sheet.

You look at Joe's work on the CET:

Joe can: Part I - Identify and divide objects into  $\frac{1}{3}$ 's. Part II -  
Match a divided object with written fractions of  $\frac{1}{3}$ ,  $\frac{1}{2}$ ,  $\frac{1}{4}$ .

Joe cannot: - - -

You describe how Joe worked with this prescription: Joe worked without  
any teacher direction on the entire CET.

Based on your analysis of Joe's work, you decide to:

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☒ Assign entire CET for skill 2.
- ☐ Assign Part II of CET for skill     .
- ☐ Write initial prescription for skill     .

Why? Pretest score (skill 2) was 57% and the CET will determine if Joe  
has gained an understanding of skill 2 while he was working on skill 1.

Based on the previous diagnosis of Joe's behavior, his performance on the unit Pretest (skill 2, in particular), and Part II of CET for skill 1, you decide to prescribe the following on 2/5:

<u>Page</u>	<u>Reason</u>
14P	CET to test mastery of skill 2

(P=CET pad)

You estimate time needed as: 30 minutes maximum.

After you recheck this CET, you record the page number and the date on line 11 of Joe's Prescription Sheet.

CET I

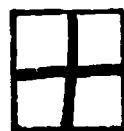
Divide the figure into the parts name below each figure.



halves



thirds



fourths



fourths

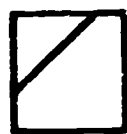


halves

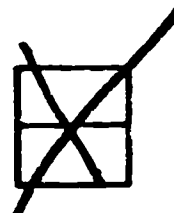
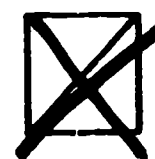
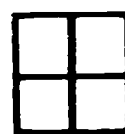
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	17	100%
	NO. OF	%
	PTS.	
	16	94
	15	88
	14	82
	13	76
	12	71
	11	65
	10	59
	9	53
	8	47
	7	41
	6	35
	5	29
	4	24
	3	18
	2	12
	1	6

Put an X on each figure in the row that is divided the way the word says.

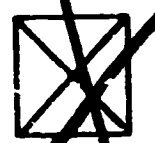
thirds



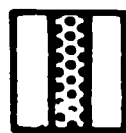
halves



fourths



Circle the fraction that tells how much of each figure is shaded.



$\frac{1}{3}$

$\frac{1}{2}$

$\frac{1}{4}$



$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{4}$



$\frac{1}{2}$

$\frac{1}{3}$

$\frac{1}{4}$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	3	100%
	NO. OF	%
	PTS.	
	2	67
	1	33

This is the CET completed by Joe and corrected by the Aide.

You record (in the role of Aide) the scores on the Prescription Sheet.

You look at Joe's work on the CET:

Joe can: Part I - State the meaning of terms  $1/2$ ,  $1/3$ , and  $1/4$ ;  
match shaded objects with written fractions.

Part II - Divide a set into  $1/3$ 's.

Joe cannot: Divide a set into  $1/4$ 's.

You describe how Joe worked with this prescription: Joe asked for  
and was allowed to use a manipulative aid (straws) on Part II but did  
not use them for solving the problems. He played with them.

Based on your analysis of Joe's work, you decide to:

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for Skill \_\_\_\_.
- ☐ Assign Part II of CET for Skill \_\_\_\_.
- ☒ Write initial prescription for Skill 3.

Why? Part II of CET and Joe's Pretest score (Skill 3) of 40% indi-  
cates that he still needs instruction in Skill 3.



CET I

Draw a line to match each sentence with the word that fits.

One-third means one of  
\_\_\_\_\_ equal parts.

One-half means one of  
\_\_\_\_\_ equal parts.

One-fourth means one of  
\_\_\_\_\_ equal parts.

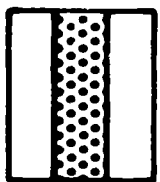
two

four

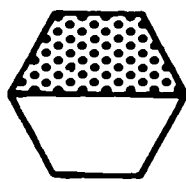
three

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	7	100%
	NO. OF PTS.	%
	6	86
	5	71
	4	57
	3	43
	2	29
	1	14

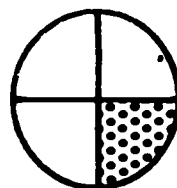
Circle the fraction that tells how much is shaded.



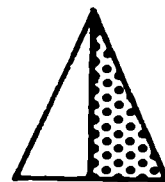
$\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{3}$



$\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{3}$

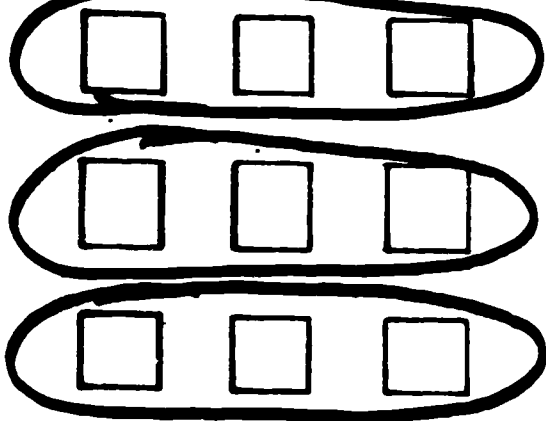


$\frac{1}{2}$   $\frac{1}{4}$   $\frac{1}{3}$

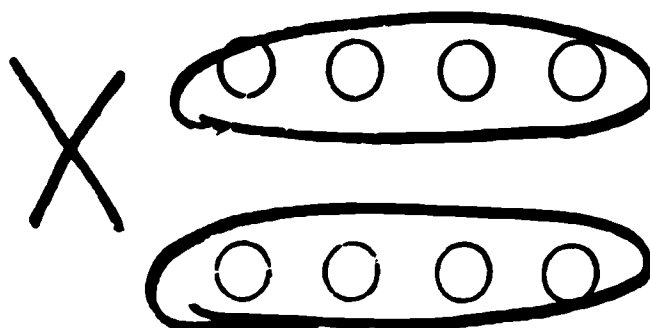


$\frac{1}{3}$   $\frac{1}{4}$   $\frac{1}{2}$

Divide this set into thirds.



Divide this set into fourths.



C I R C L E  C O R R E C T  B O X	TL. PTS.	
	2	100%
	NO. OF PTS.	%
	1	50

This is a copy of the STS booklet for Skill 3.

You examine all the skill sheets and STS sheets (pp. 20-21) in the booklet to become familiar with materials for this skill.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 3, in particular) and Part II of the CET for Skill 2, you decide to prescribe the following on 2/5:

<u>Page</u>	<u>Reason</u>
Read Student Page	Introduces skill; previews work.
23 R *09	Discriminates among sets divided into 1/4's.
23 R 09	Divides regularly arranged sets into 1/4's.
4	Divides sets into 1/4's.
6 *02	Divides sets into 1/3's.
8 02	Divides sets into 1/2, 1/3, 1/4.
*09 (records) tells Joe that he will be using a disc page marked 23R.	
*02 (peer tutor) tells Joe that Mark will help him with these pages.	

You estimate the time needed as: 2 class periods

After you recheck these five pages and the two disc scripts, you record the page numbers and the date on lines 12-17 of Joe's Prescription Sheet.

SCHOOL CODE

NAME \_\_\_\_\_

NUMBER \_\_\_\_\_ CLASS \_\_\_\_\_



and only prescribed instruction

MATHEMATICS

# Standard Teaching Sequence Booklet

LEVEL C

LEVEL C

FRACTIONS (08)

SKILL 3

Based upon materials developed by The Mathematics Curriculum Staff,  
Learning Research and Development Center, University of Pittsburgh; Joseph  
I. Lipson, Ph.D., Director; Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome D. Kaplan, Ed.D., Teachers College, Columbia University

Appleton-Century-Crofts



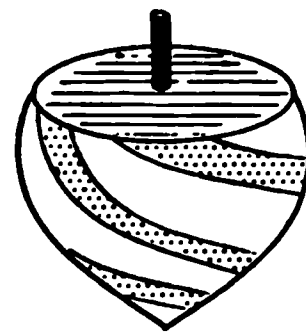
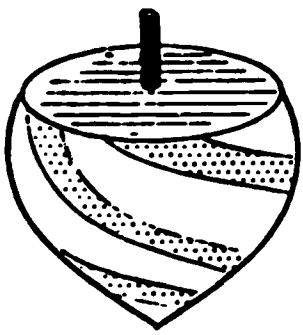
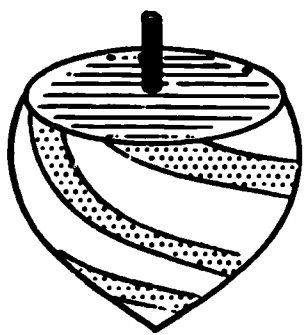
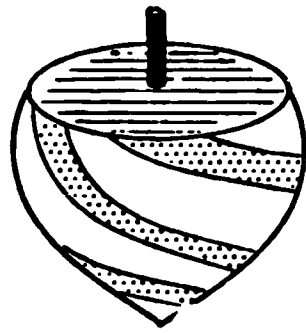
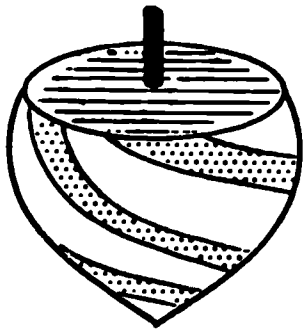
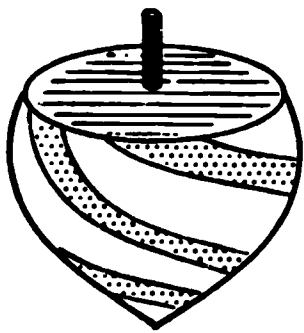
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## DEVELOPMENTAL EDITION

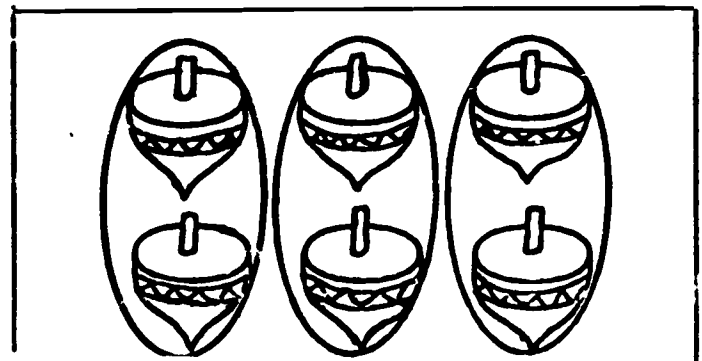
## TO THE STUDENT

Can you divide this set of tops into thirds?

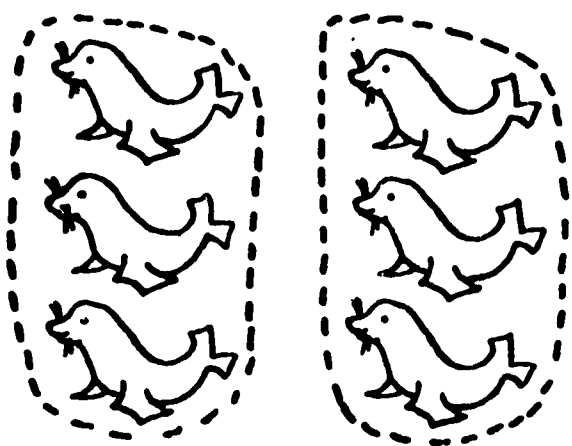


You will learn how in this booklet.

Answer

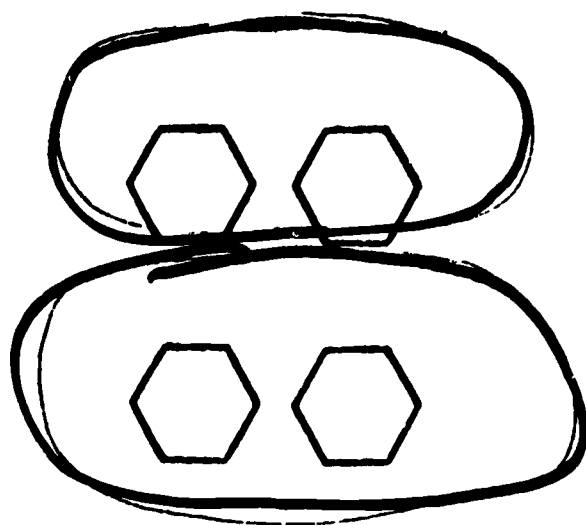


Count the objects in each set. Now divide the sets into two parts equal in number. Each part is called one-half. Draw a ring around each half of the sets below.

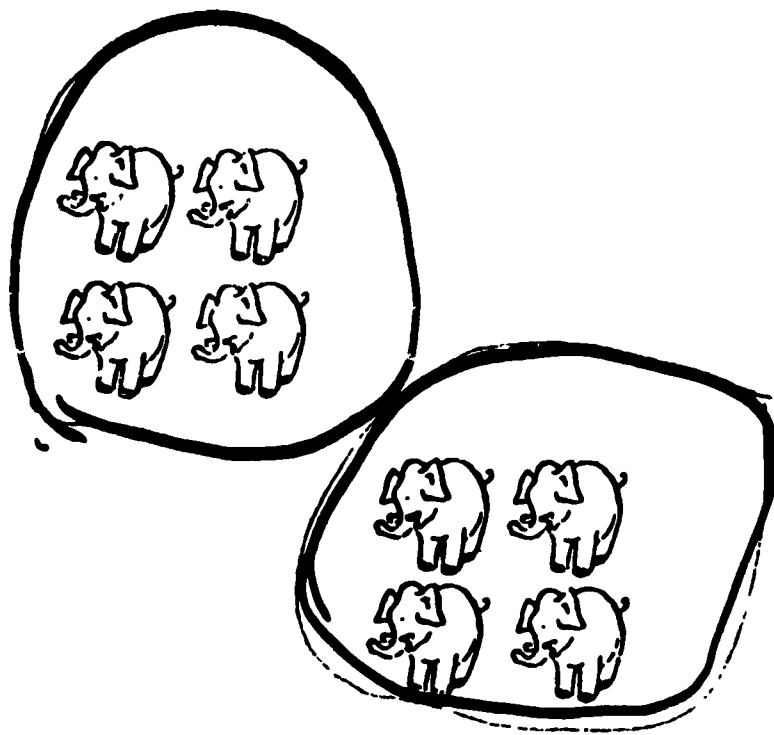
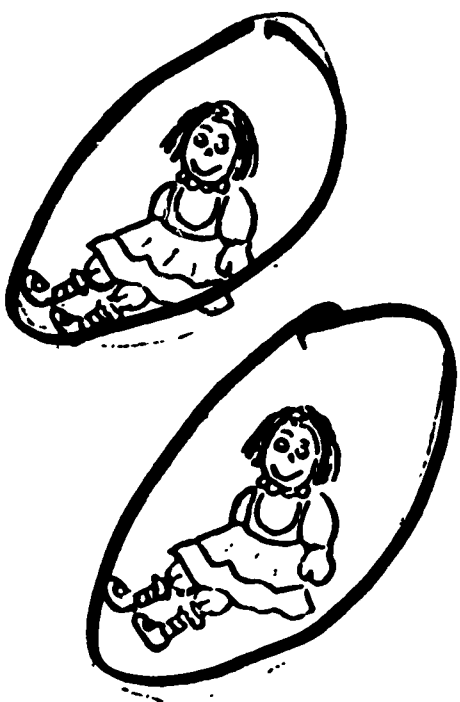


one-half

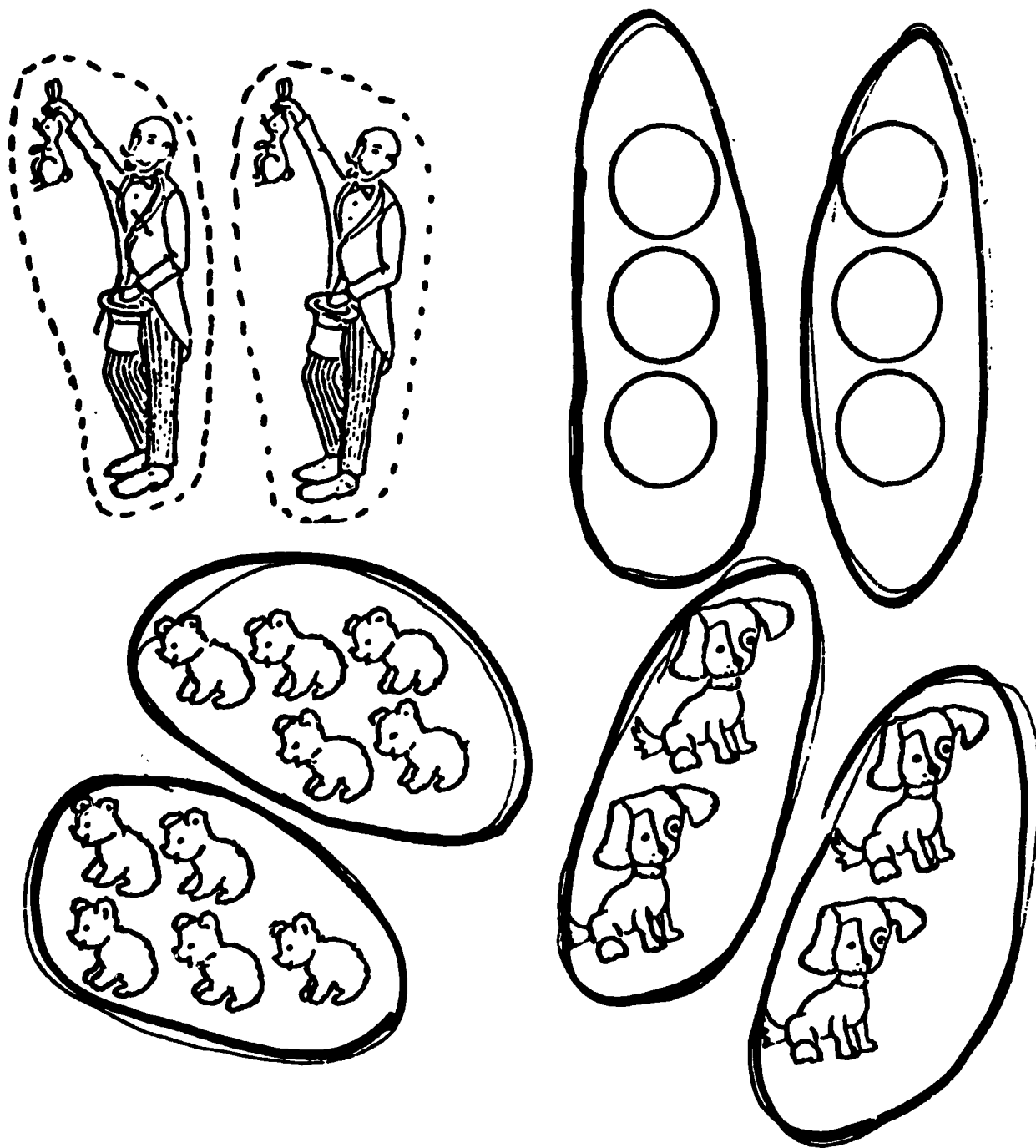
one-half



Scoring note:  
Accept any correct  
circling.



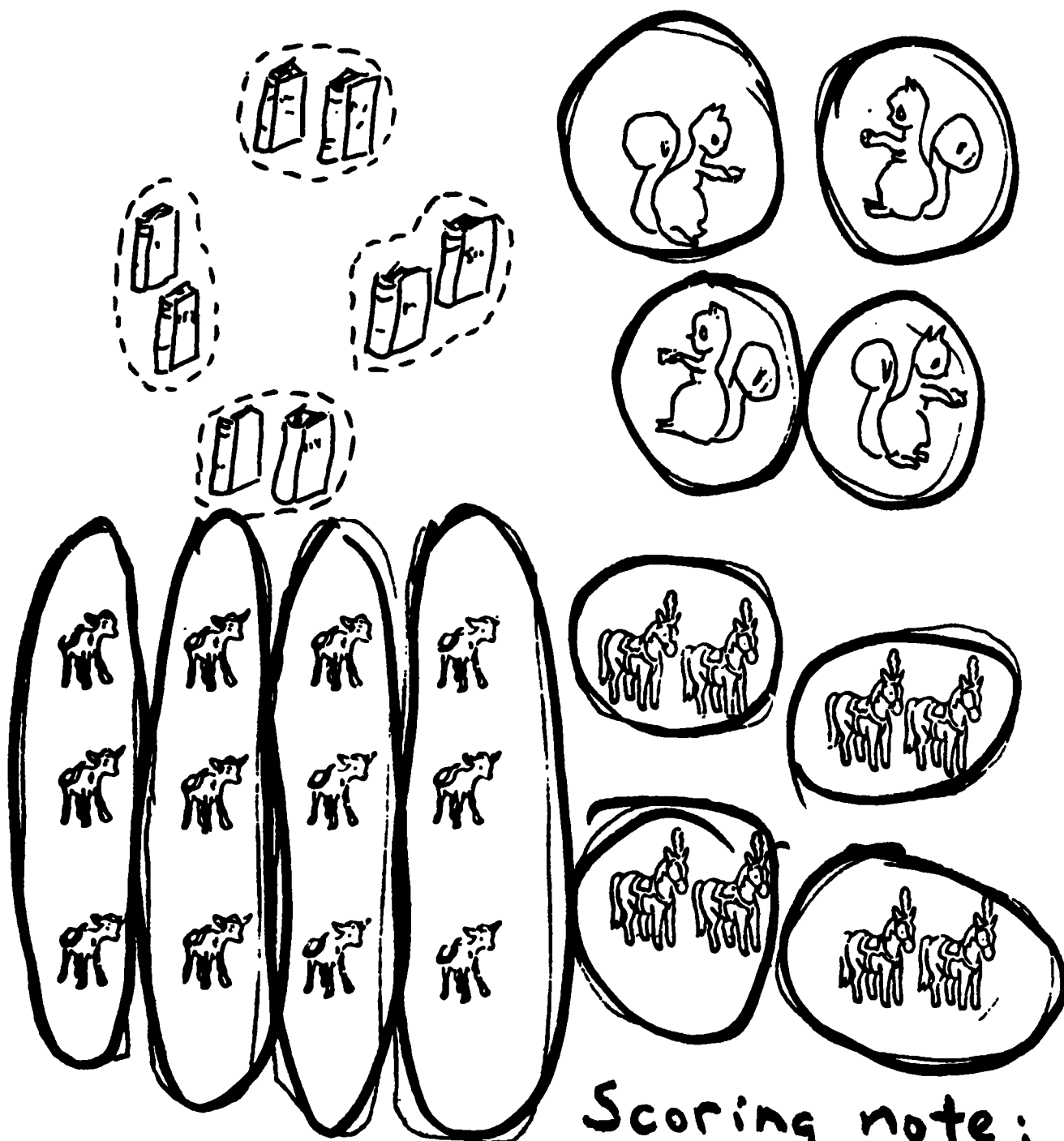
When you divide a set into two parts equal in number, each part is called one-half. Draw a ring around each half of the sets below.



Scoring note:  
Accept any correct  
Circling.

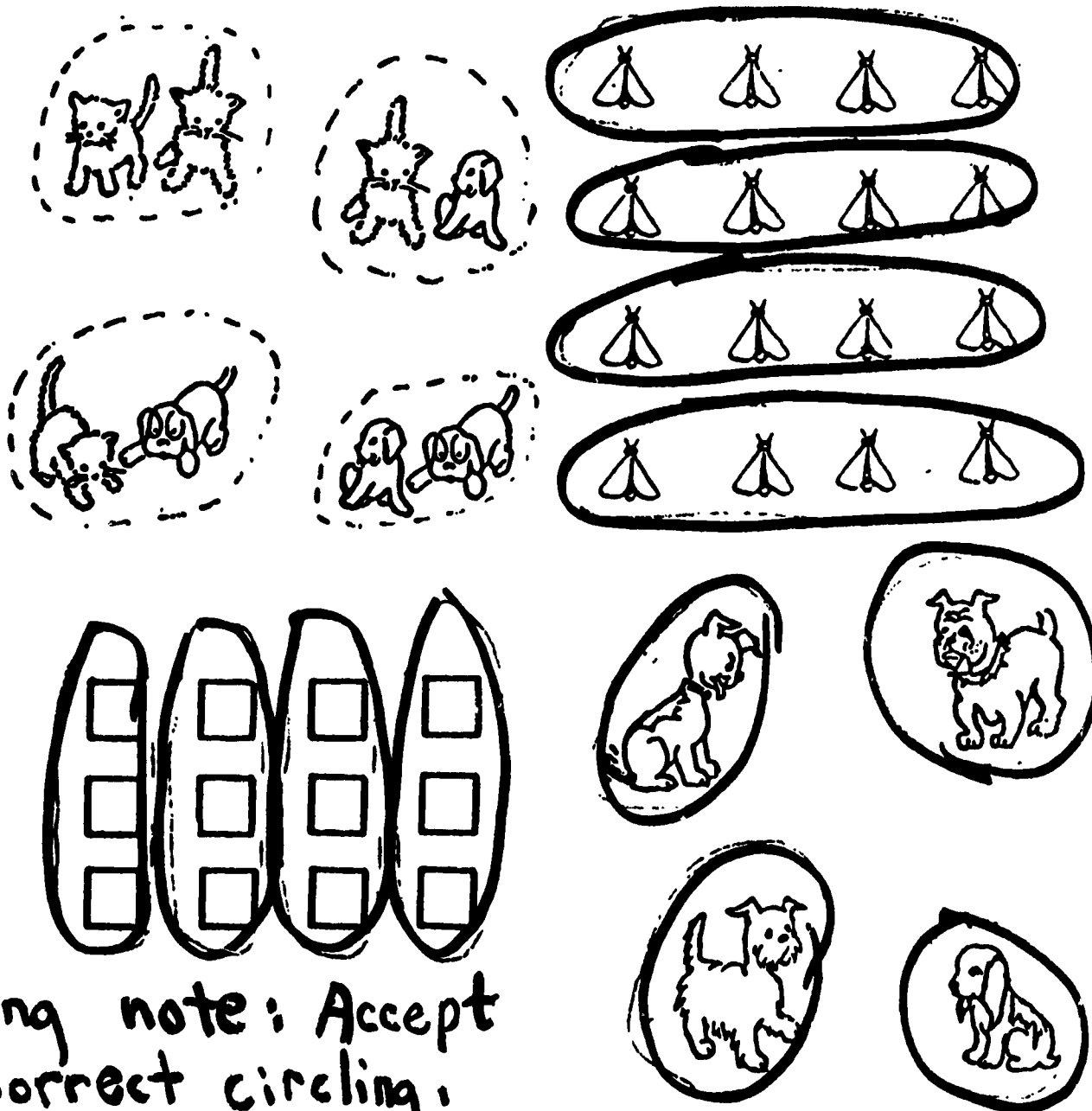
For extra practice, do Page 15.

Count the objects in each set. Now divide each set into four parts equal in number. Each part is called one-fourth. Draw a ring around each fourth.



Scoring note:  
Accept any correct circling.

When you divide a set into four parts equal in number, each part is called one-fourth. Draw a ring around each fourth of the sets below.

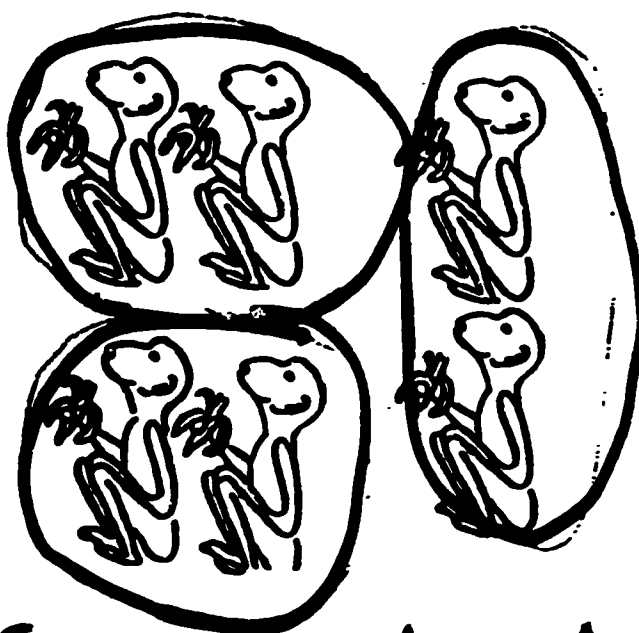
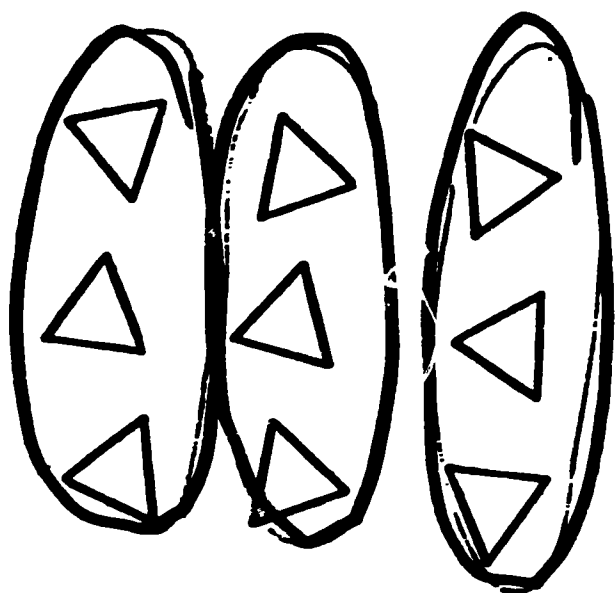
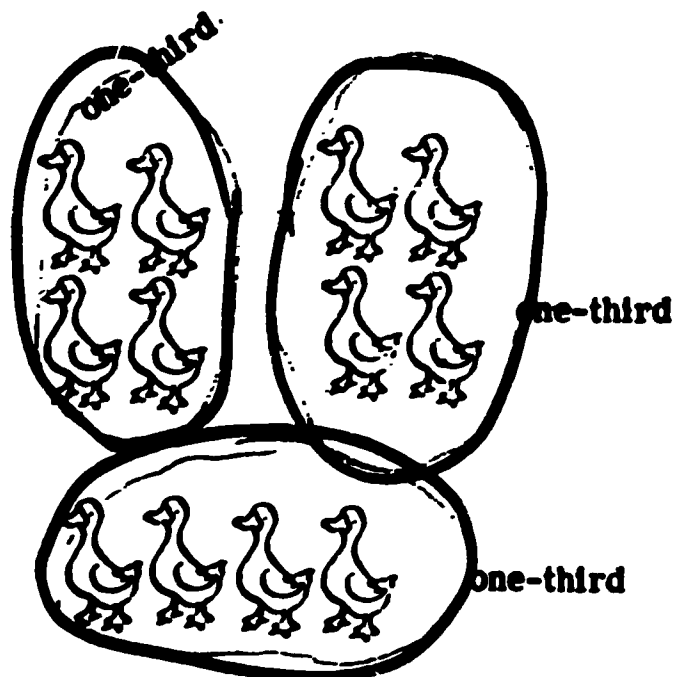
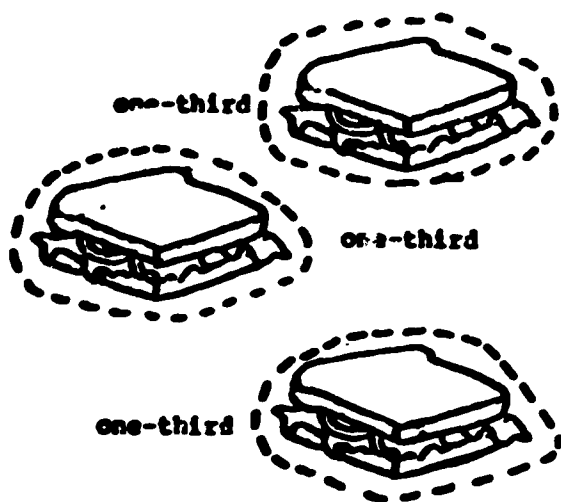


Scoring note: Accept any correct circling.

For extra practice, do Page 16.

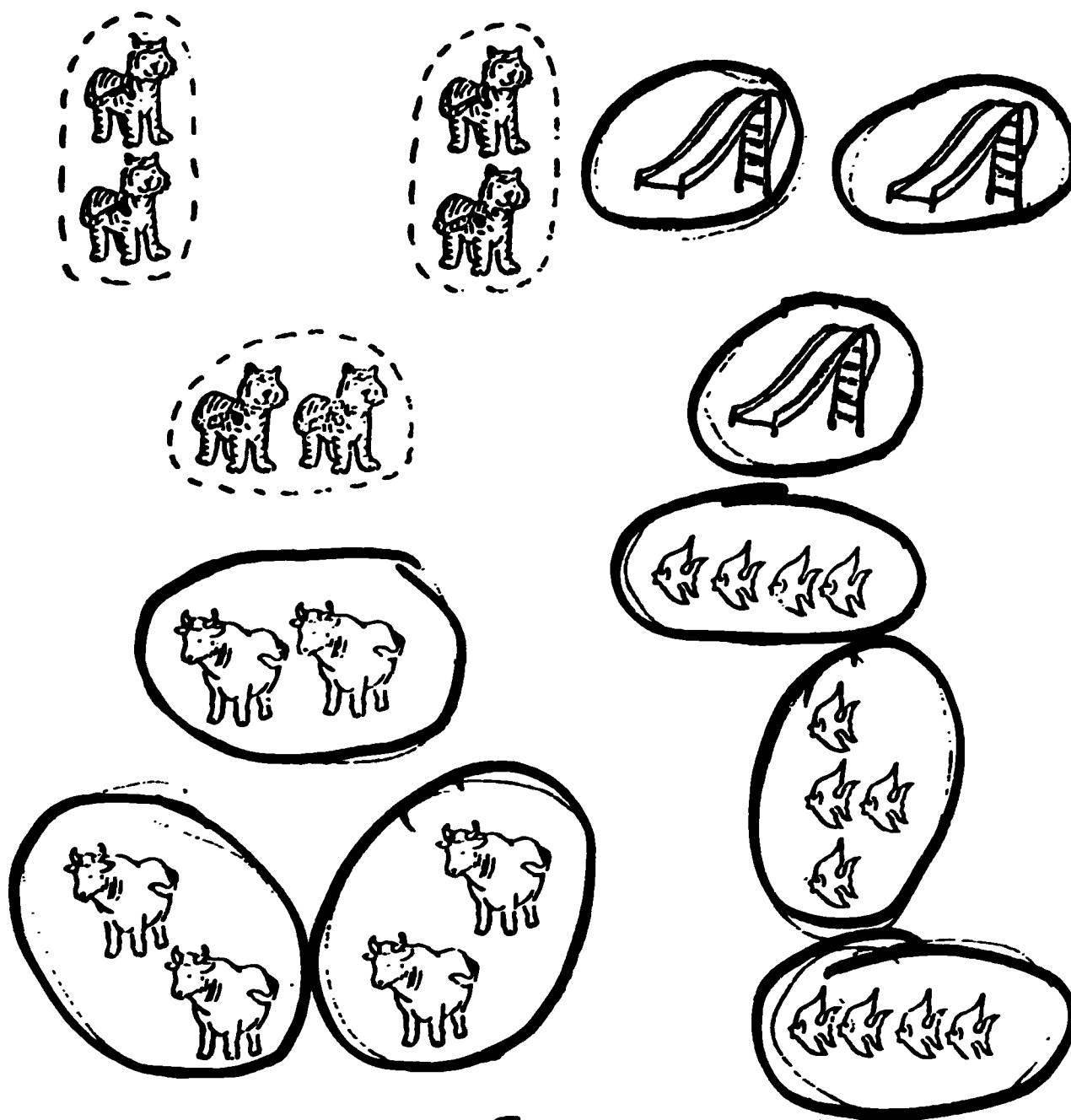


Count the objects in each set. Now divide each set into three parts equal in number. Each part is called one-third. Draw a ring around each third.



Scoring note : Accept any correct circling.

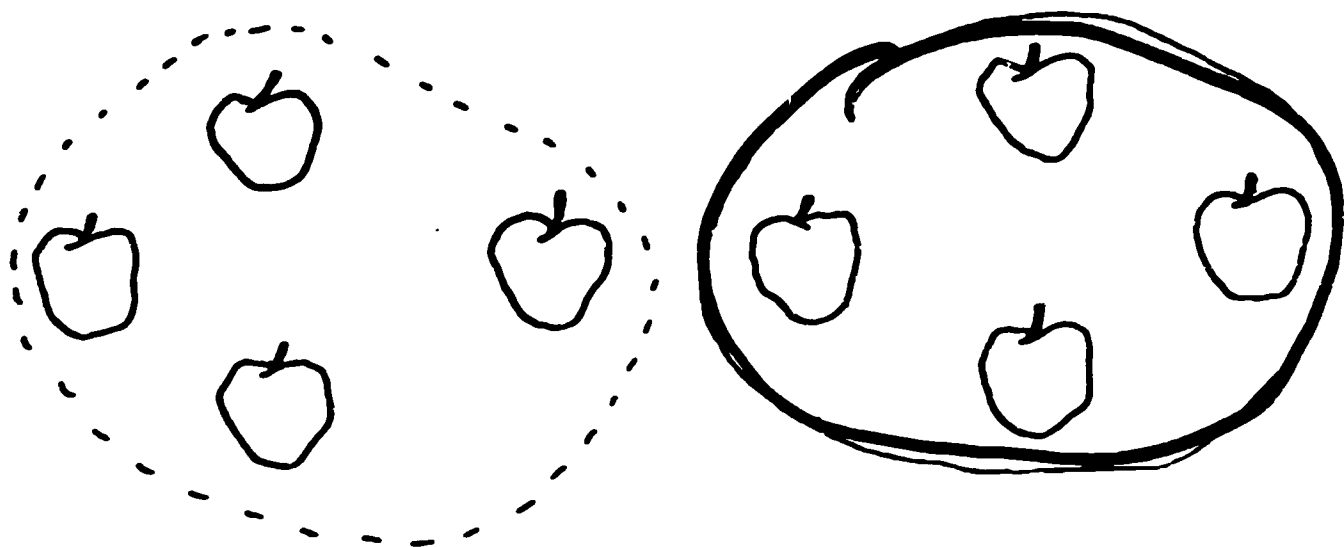
When you divide a set into three parts equal in number, each part is called one-third. Draw a ring around each third of the sets below.



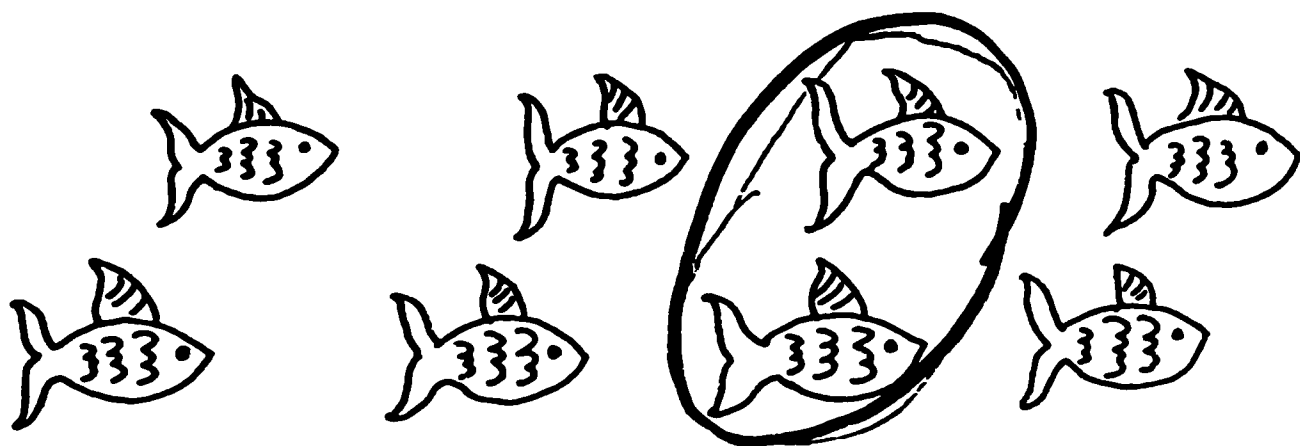
Scoring note: Accept any correct circling.

For extra practice, do Page 17.

When you circle one-half of a set, you circle one of two parts equal in number. Circle one-half of this set.

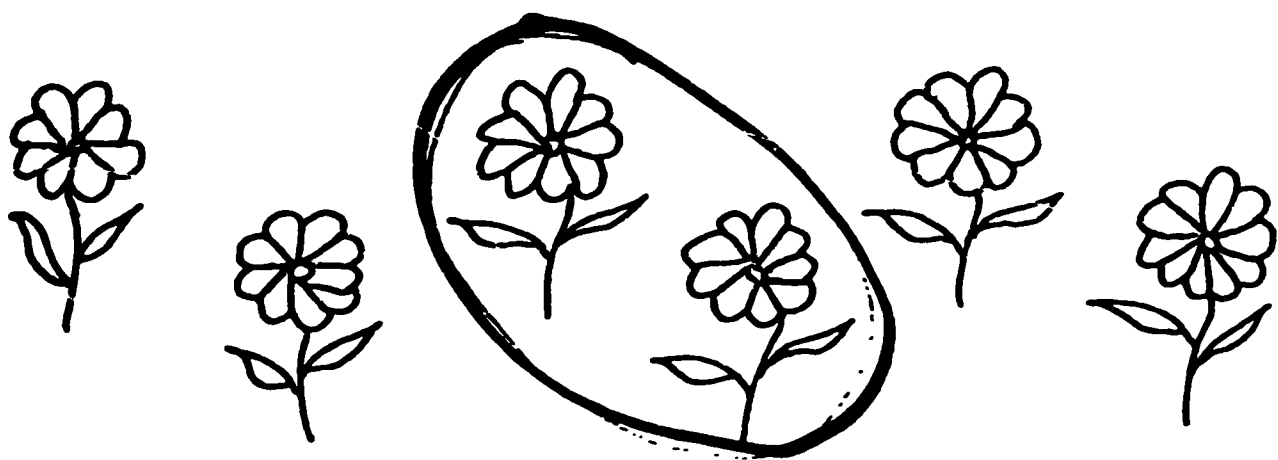


When you circle one-fourth of a set, you circle one of four parts equal in number. Circle one-fourth of this set.

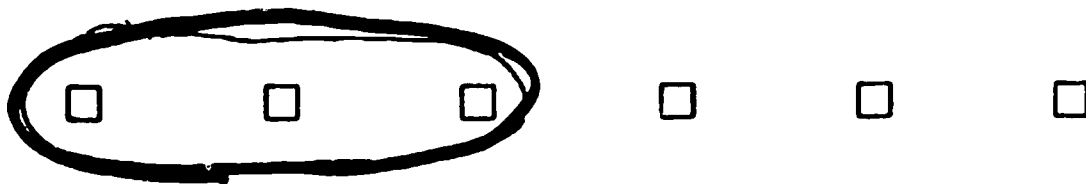


Scoring note: Accept any correct circling.

When you circle one-third of a set, you circle one of three parts equal in number. Circle one-third of this set.



Draw a ring around one-half ( $\frac{1}{2}$ ) of the set.



Draw a ring around one-third ( $\frac{1}{3}$ ) of the set.



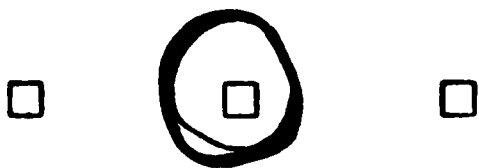
Draw a ring around one-fourth ( $\frac{1}{4}$ ) of the set.



Draw a ring around one-third ( $\frac{1}{3}$ ) of the set.

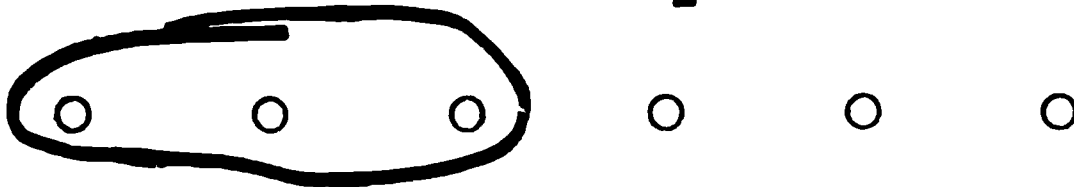


Draw a circle around one-fourth ( $\frac{1}{4}$ ) of the set.

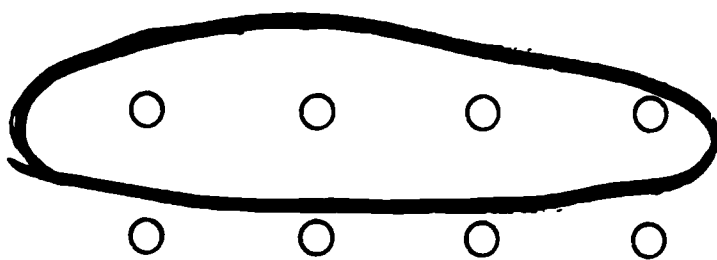
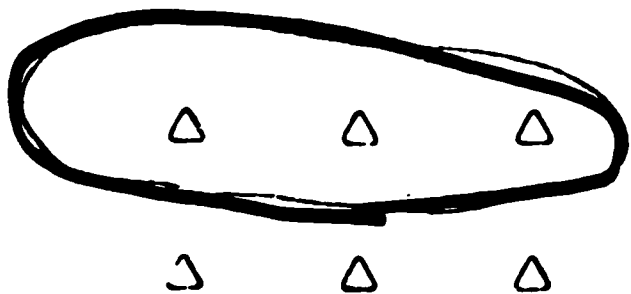


Scoring note: Accept any correct circling.

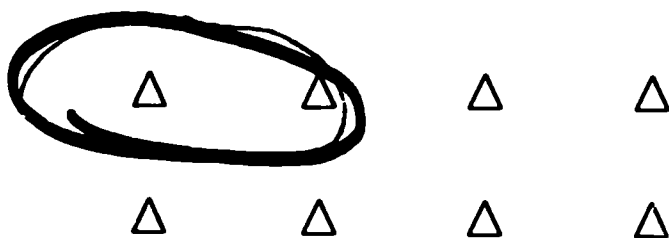
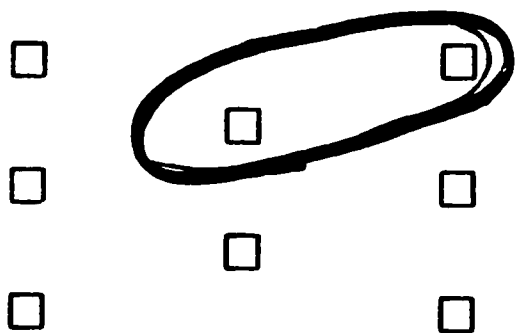
Draw a circle around one-half ( $\frac{1}{2}$ ) of the set.



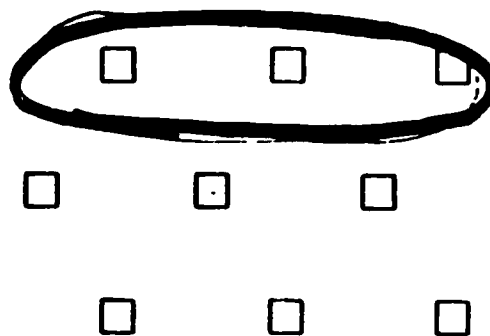
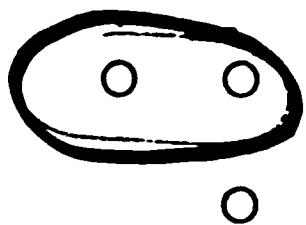
Draw a ring around one-half ( $\frac{1}{2}$ ) of each set.



Draw a ring around one-fourth ( $\frac{1}{4}$ ) of each set.



Draw a ring around one-third ( $\frac{1}{3}$ ) of each set.

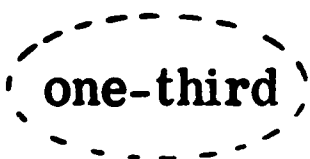


Scoring note: Accept any correct circling

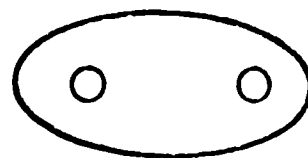
Each set below is divided to show one-half, one-third, or one-fourth. Circle the answer which describes each set.



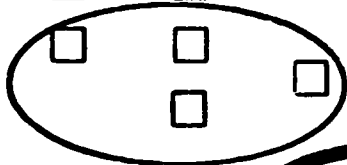
one-half



one-third



one-fourth



one-half



one-fourth



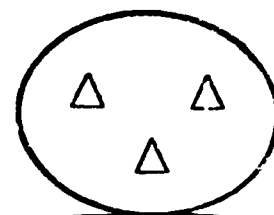
one-third



one-half



one-third



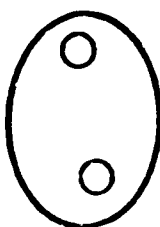
one-fourth



one-half



one-third



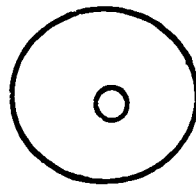
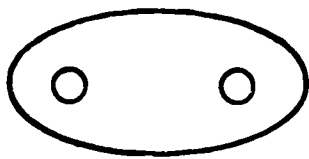
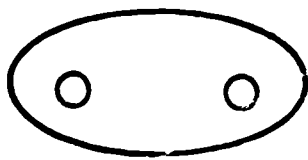
one-fourth



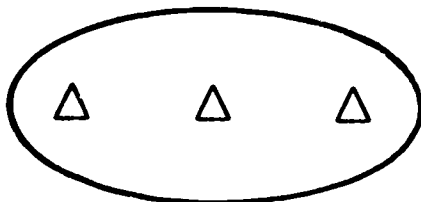
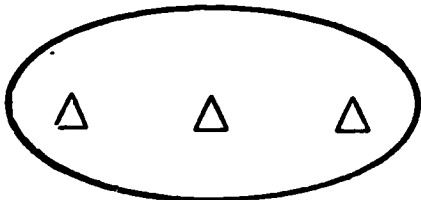
Scoring note: Accept any correct circling.

For extra practice, do Page 18.

One-half means one of two parts equal in number. Is each set divided into halves? Circle yes or no.

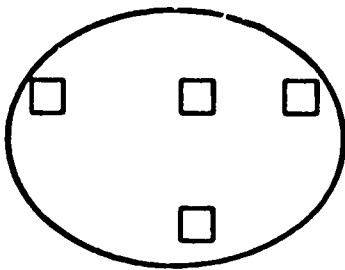
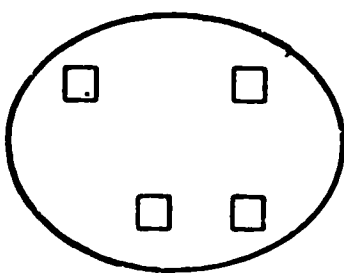


yes



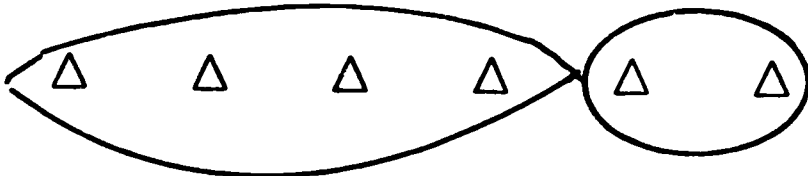
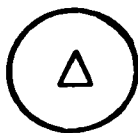
yes

no



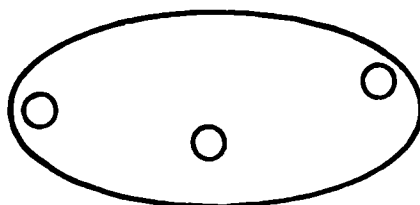
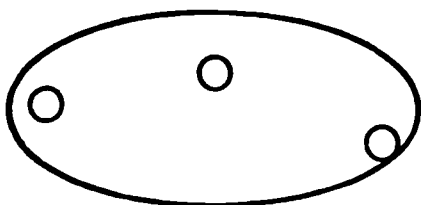
yes

no



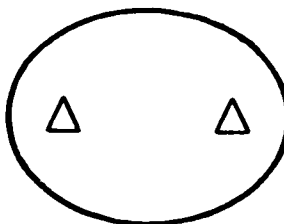
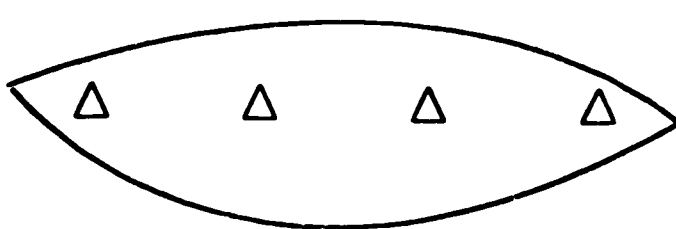
yes

no



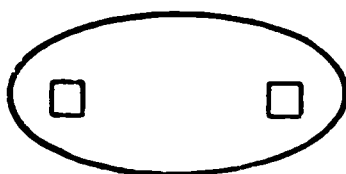
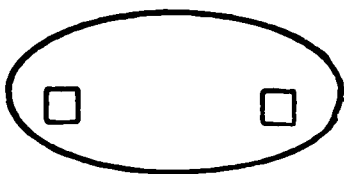
yes

no



yes

no

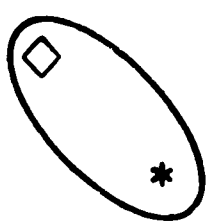


yes

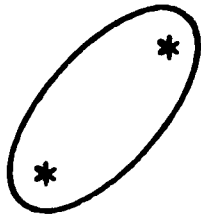
no

Each set is divided to show one-half, one-third or one-fourth.

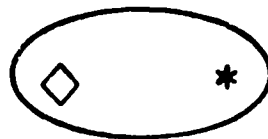
Circle the answer which describes each set. Remember to count the objects.



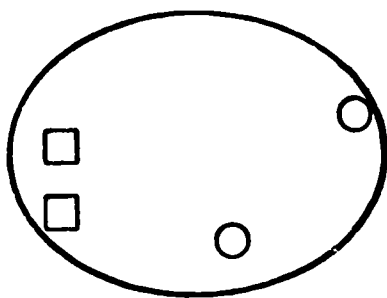
one-half



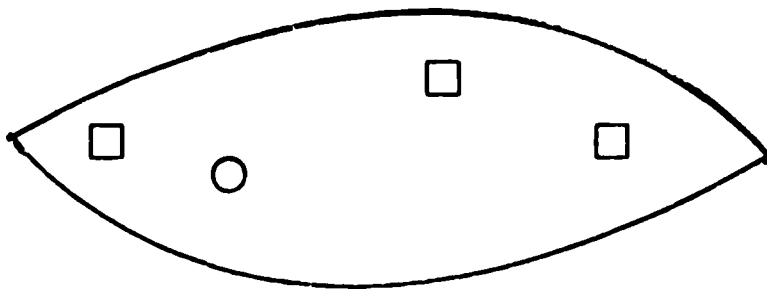
one-third



one-fourth

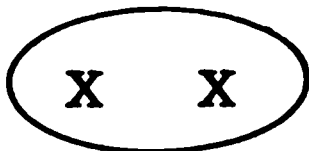


one-half

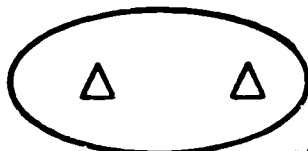


one-third

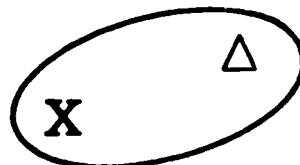
one-fourth



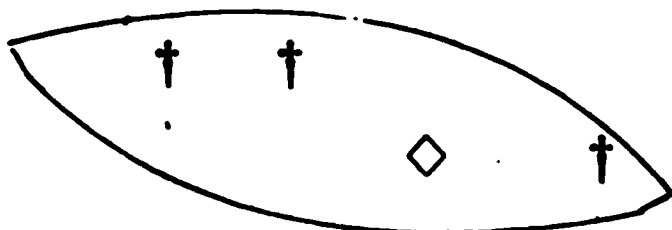
one-half



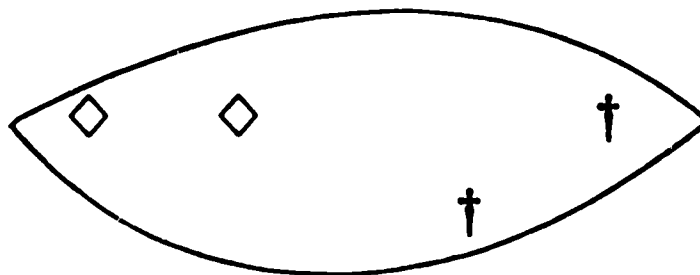
one-third



one-fourth



one-half



one-third

one-fourth



Circle yes or no.

Is each set divided into thirds?

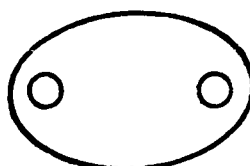
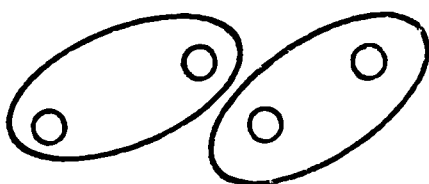
You should have three parts equal in number.

Remember to count the objects.



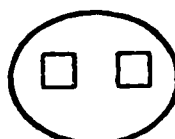
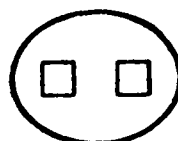
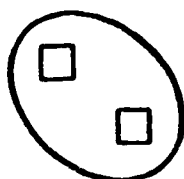
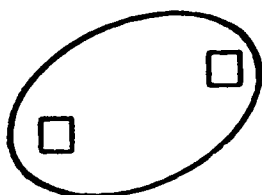
yes

no



yes

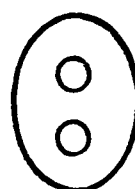
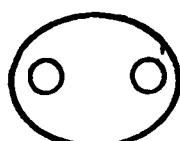
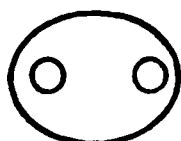
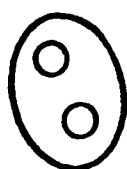
no



yes

no

Are these sets divided into fourths? There should be four parts equal in number.



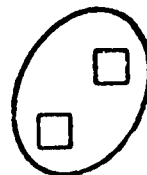
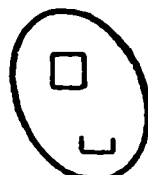
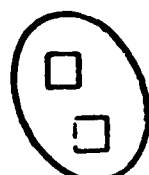
yes

no



yes

no



yes

no

CET I

Divide each set according to the word on the left.

halves



thirds

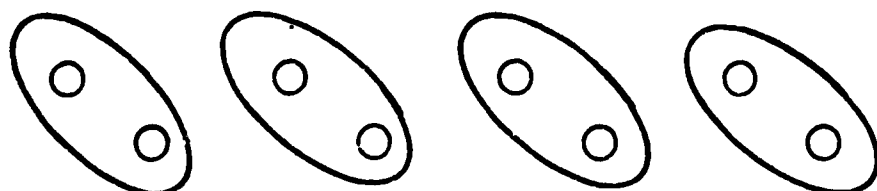


fourths



C I R C L E  C O R R E C T  B O X	TL. PTS.	
	6	100%
	NO OF PTS.	
	5	83
	4	67
	3	50
	2	33
	1	17

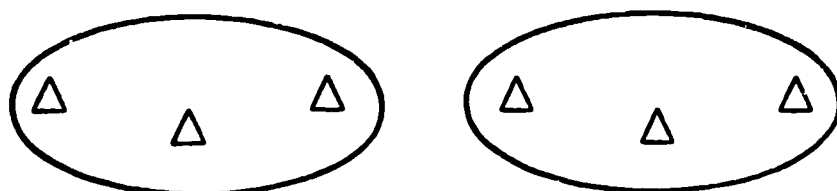
Circle the word that tells how each set is divided.



halves

fourths

thirds



halves

fourths

thirds



halves

fourths

thirds

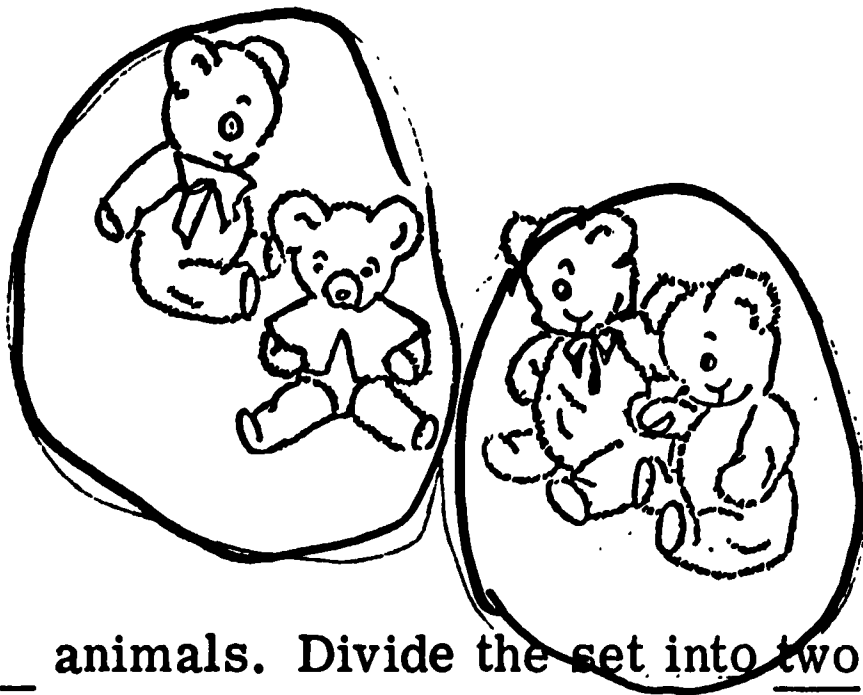
Divide this set into four equal parts.



Each part is \_\_\_\_\_ of the whole set.

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	2	100%
	NO OF PTS.	
	1	50

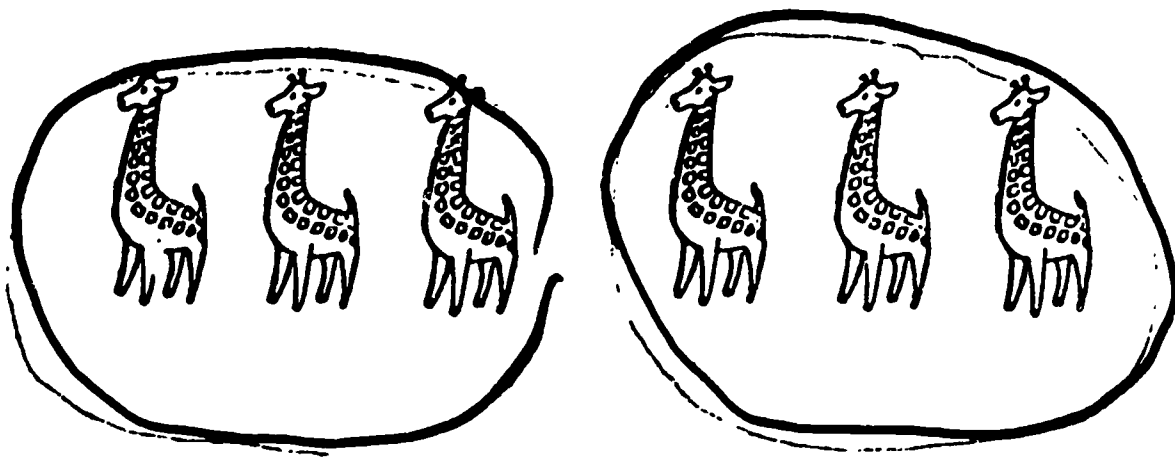
Count the animals in this set.



There are 4 animals. Divide the set into two parts of equal number. Each part is called one-half.

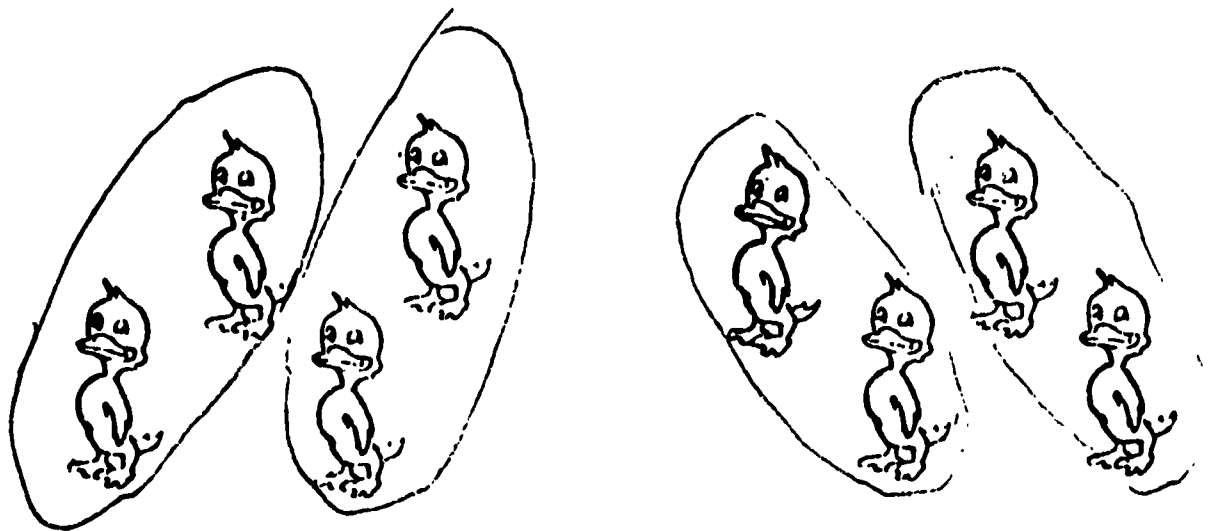
Count the animals in this set.

Scoring note: Accept any correct circling.



There are 6 animals. Divide the set into two parts of equal number. Each part is called one-half.

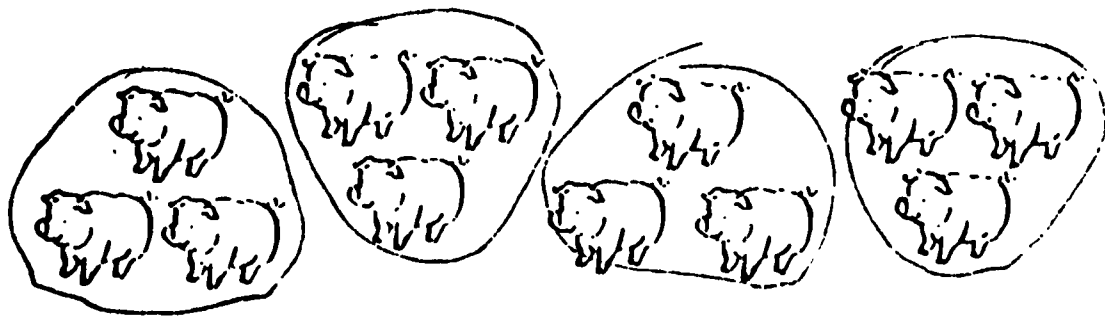
Count the animals in this set.



There are 8 animals. Divide the set into four parts of equal number. Each part has 2 animals. Each part is called one-fourth.

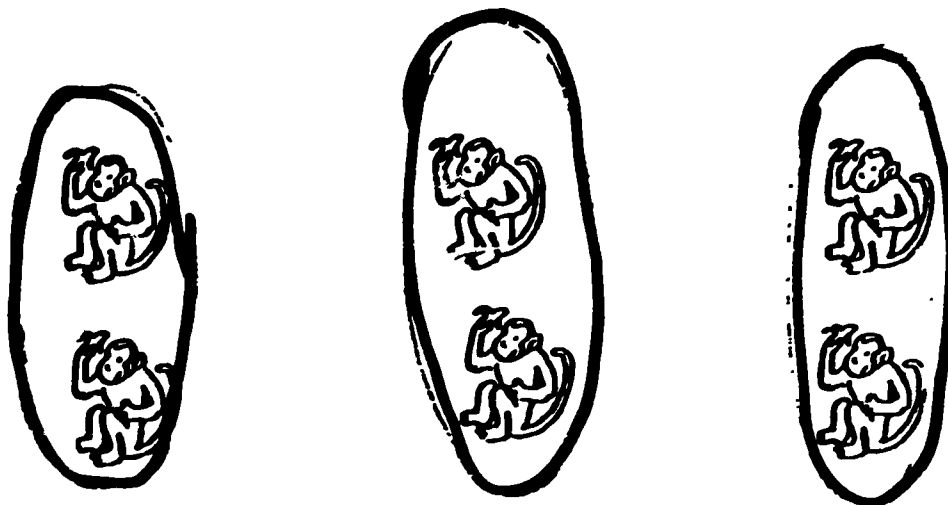
Count the animals in this set.

*Scoring note: Accept any correct circling.*



There are 12 animals. Divide the set into four parts of equal number. Each part has 3 animals. Each part is called one-fourth.

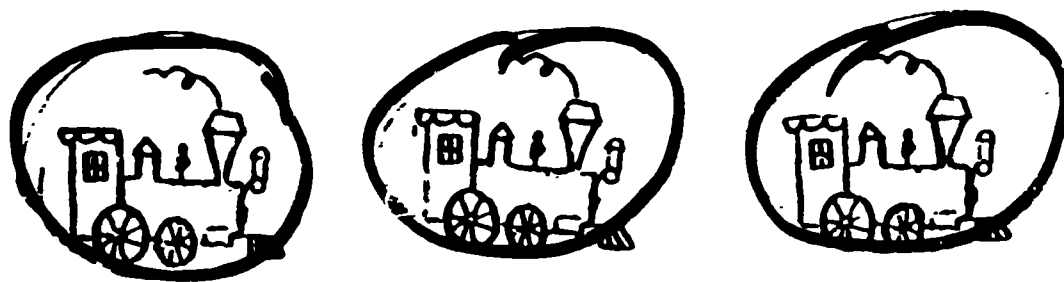
Count the animals in this set.



There are 6 animals. Divide the set into three parts of equal number. Each part has 2 animals. Each part is called one-third.

*Scoring note: Accept any correct circling.*

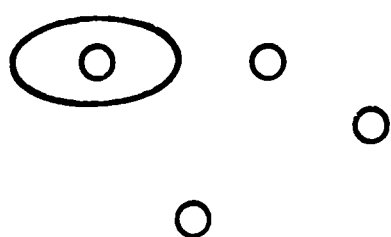
Count the objects in this set.



There are 3 objects. Divide the set into three parts of equal number. Each part has 1 object. Each part is called one-third.

Draw a ring around the fraction that tells what part of the picture is circled.

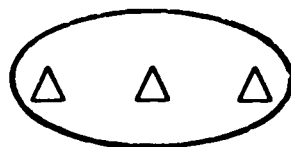
Remember that one-half is one of 2 parts of equal number.  
 one-fourth is one of 4 parts of equal number.  
 one-third is one of 3 parts of equal number.



one-half

one-third

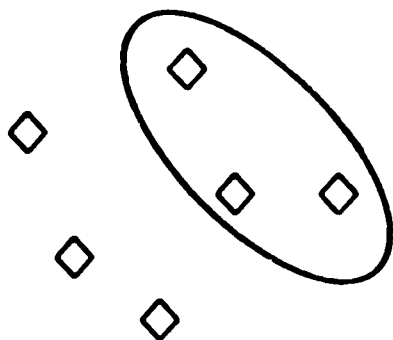
one-fourth



one-half

one-third

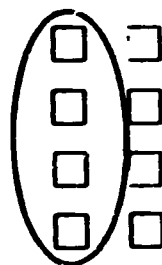
one-fourth



one-half

one-third

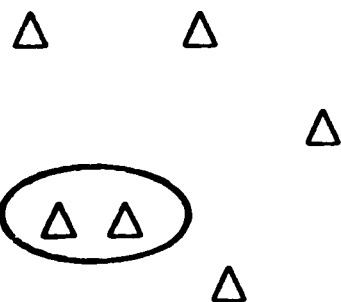
one-fourth



one-half

one-third

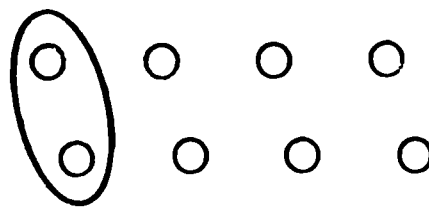
one-fourth



one-half

one-third

one-fourth



one-half

one-third

one-fourth

CET II

Divide each set as the word tells you.

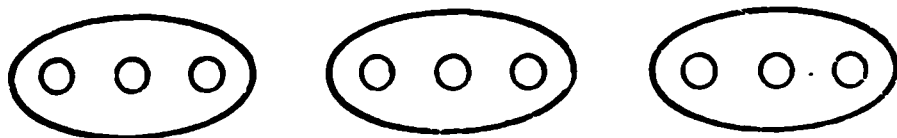
halves 

fourths 

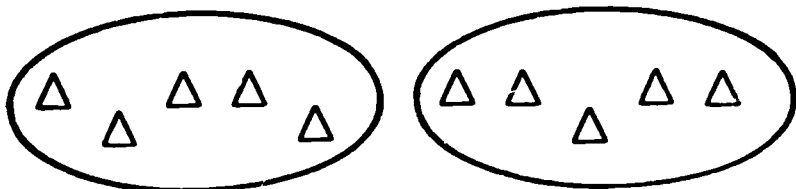
thirds 

C I R C L E  C O R R E C T  B O X	TL PTS	
	6	100%
	NO OF PTS	
	5	83
	4	67
	3	50
	2	33
	1	17

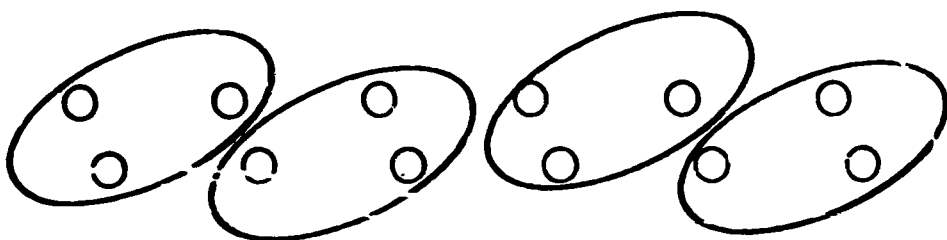
Circle the word that tells how each set is divided.



halves  
thirds  
fourths



halves  
thirds  
fourths



halves  
thirds  
fourths

Divide the set into three equal parts.



Each part is \_\_\_\_\_ of the whole set.

C I R C L E  C O R R E C T  B O X	TL PTS	
	2	100%
	NO OF PTS	
	1	50

LEVEL C, FRACTIONS, SKILL 3

**OBJECTIVE:** Divides a set of objects into halves, thirds, or fourths, or identifies a set of objects divided into halves, thirds, or fourths.

STANDARD TEACHING SEQUENCE

Page	Supplementary Material
1. Divides set into halves.	
2. Divides set into halves.	15
3. Divides set into fourths.	
4. Divides set into fourths.	16
5. Divides set into thirds.	
6. Divides set into thirds.	17
7. Circles fraction of set.	
8. Circles fraction of set.	
9. Circles fraction of set.	
10. Selects fraction which describes circled part of set.	18
11. Indicates whether set is divided into halves.	
12. Selects fraction which describes circled part of set. (one-fourth)	
13. Indicates whether set is divided into thirds and fourths.	
14. CET I.	
CET II.	19

Circle pages that are to be done.



## Standard Teaching Sequence, Con't

1967 - 68

Sequence No.	Prescription No.
{ 20R	Identifies sets which have been divided into halves. Divides sets into halves.
	Identifies sets which have been divided into thirds. Divides sets into thirds.
{ 21R	Examines sets which have been divided into parts to determine which are divided into fourths and which are not.
	Divides sets into fourths. Sets contain 8 to 20 objects regularly arranged.
{ 22R	
{ 23R	

### Teaching Aids:

Milton Bradley Fractional Parts on a Board  
Creative Playthings Simple Fractions  
Ideal Fractions Made Easy

These are the five skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Discriminate between and divide sets into 1/4's, 1/3's and 1/2's.

Joe cannot: - - -

You describe how Joe worked with this prescription: Joe worked well independently;  
he and Mark took a longer time for the peer tutoring than had been expected,  
but they were very intent on their work and Joe benefited from this setting.

Based on your analysis of Joe's work, you decide to:

- ☐ Revise original prescription
- ☐ Extend prescription
- ☒ Assign a CET for Skill 3

Why? Joe's performance on the skill sheets indicates mastery of Skill 3.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 3, in particular) and on the skill sheets for this skill, you decide to prescribe the following on 2/10:

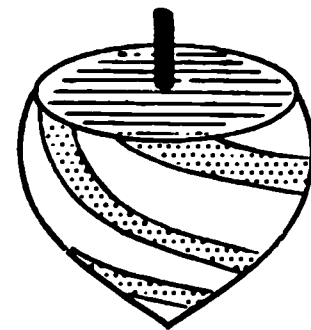
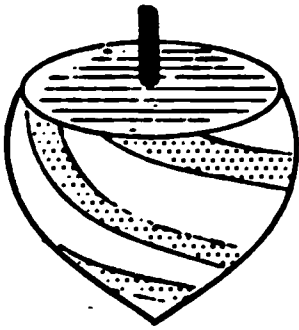
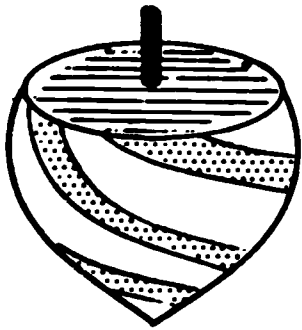
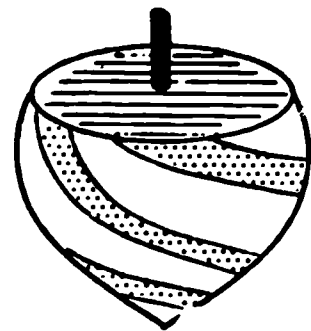
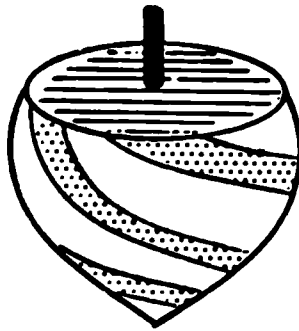
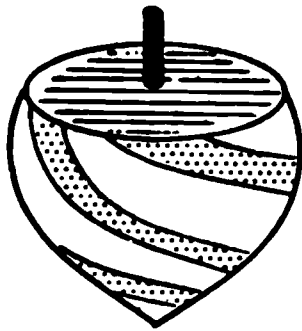
<u>Page</u>	<u>Reason</u>
14	CET to test mastery of Skill 3.

You estimate the time needed as: 20 minutes maximum.

After you recheck this CET, you record the page number and the date on line 18 of Joe's Prescription Sheet.

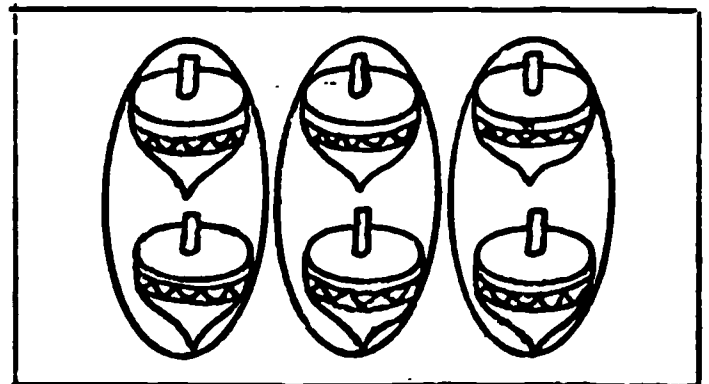
## TO THE STUDENT

Can you divide this set of tops into thirds?

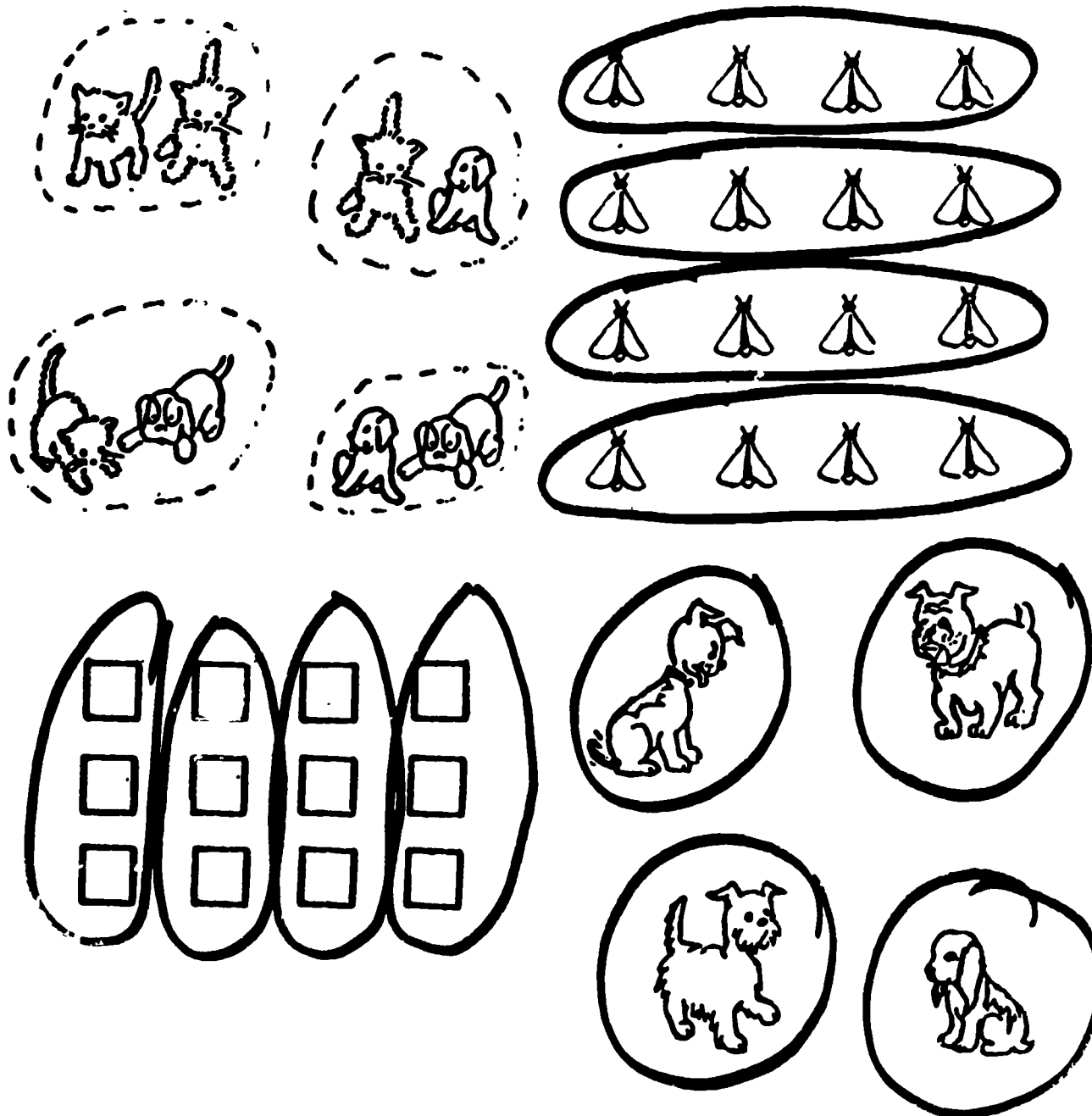


You will learn how in this booklet.

Answer

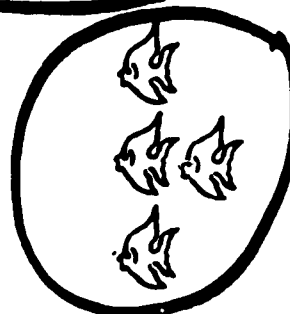
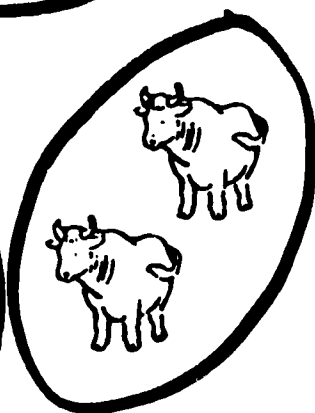
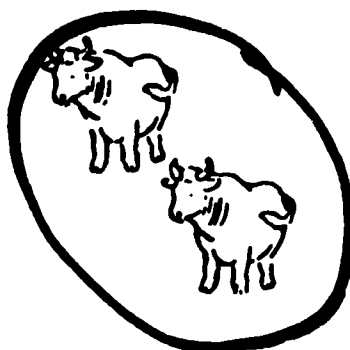
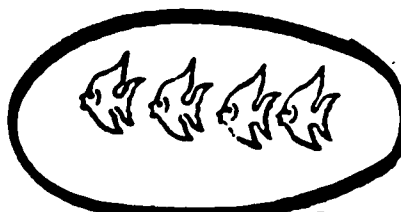
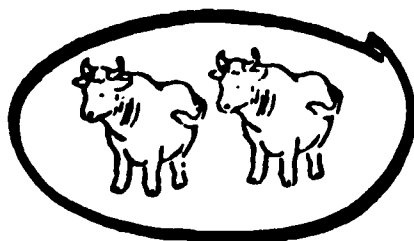
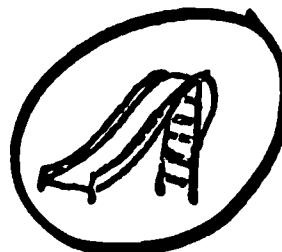
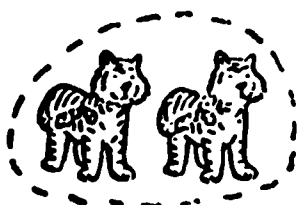
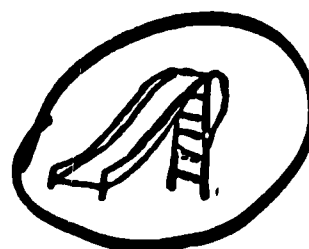
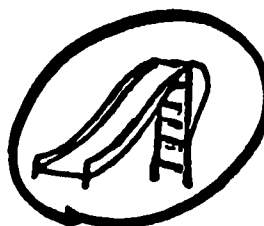


When you divide a set into four parts equal in number, each part is called one-fourth. Draw a ring around each fourth of the sets below.



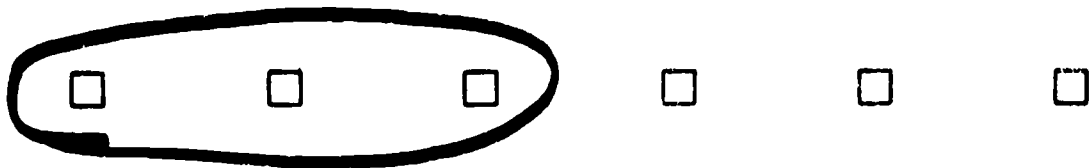
For extra practice, do Page 16.

When you divide a set into three parts equal in number, each part is called one-third. Draw a ring around each third of the sets below.



For extra practice, do Page 17.

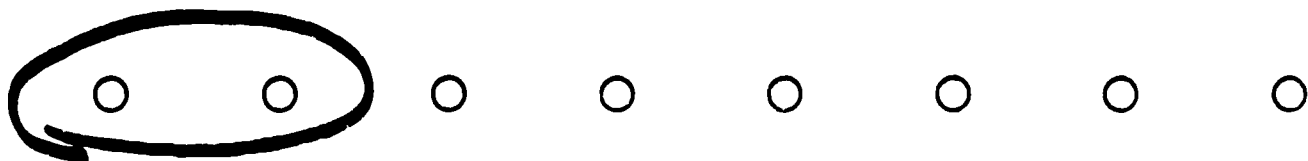
Draw a ring around one-half ( $\frac{1}{2}$ ) of the set.



Draw a ring around one-third ( $\frac{1}{3}$ ) of the set.



Draw a ring around one-fourth ( $\frac{1}{4}$ ) of the set.



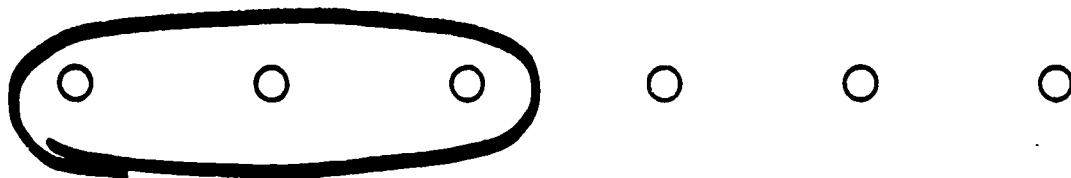
Draw a ring around one-third ( $\frac{1}{3}$ ) of the set.



Draw a circle around one-fourth ( $\frac{1}{4}$ ) of the set.

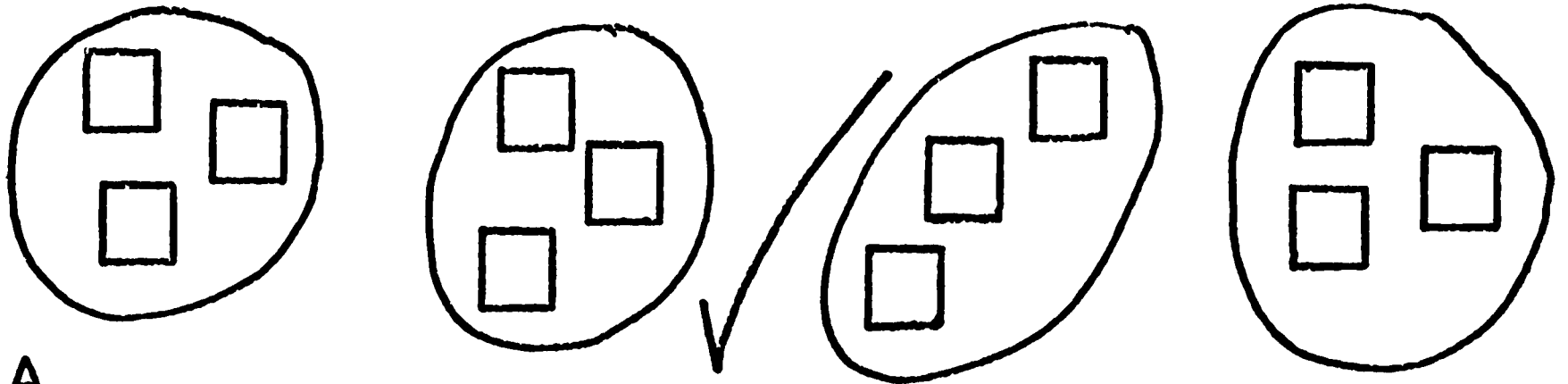


Draw a circle around one-half ( $\frac{1}{2}$ ) of the set.

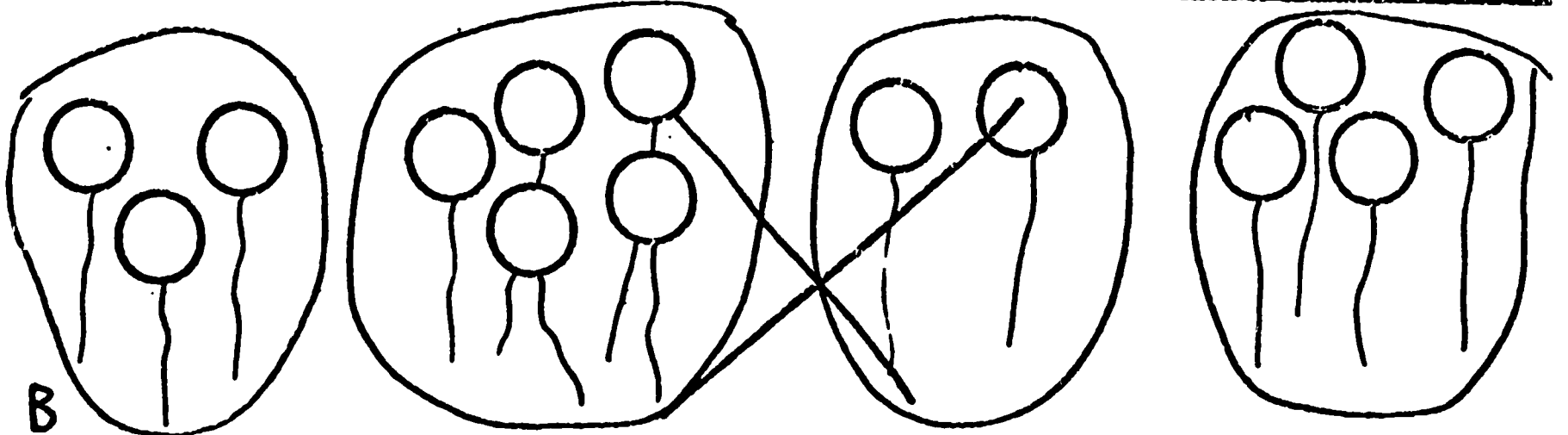


Name Joe B. Date \_\_\_\_\_ Room 4

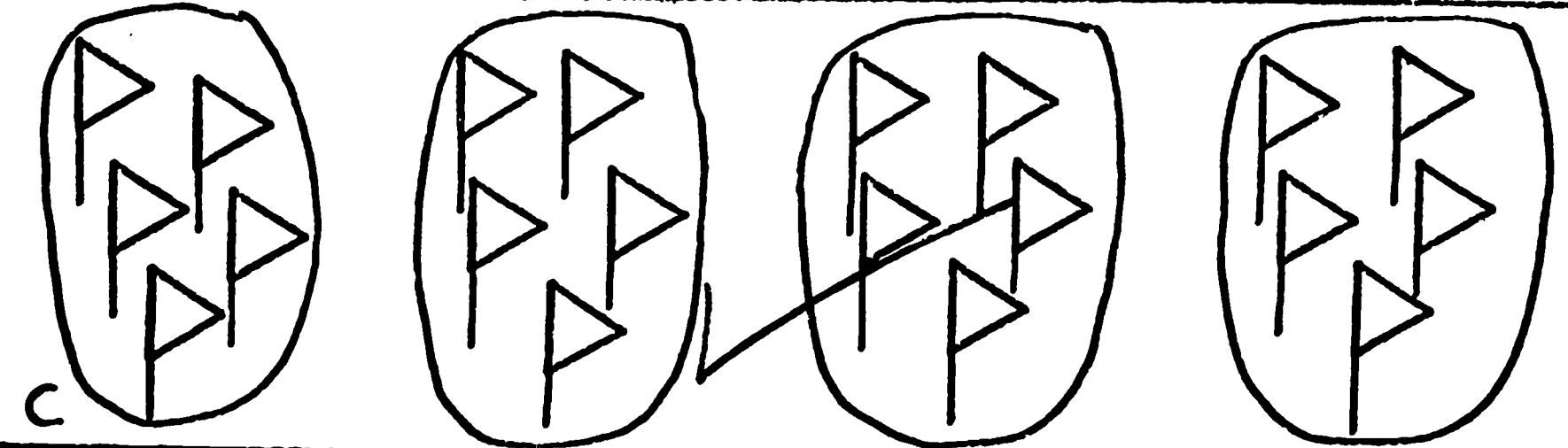
Get disc C-Frac-3-22R



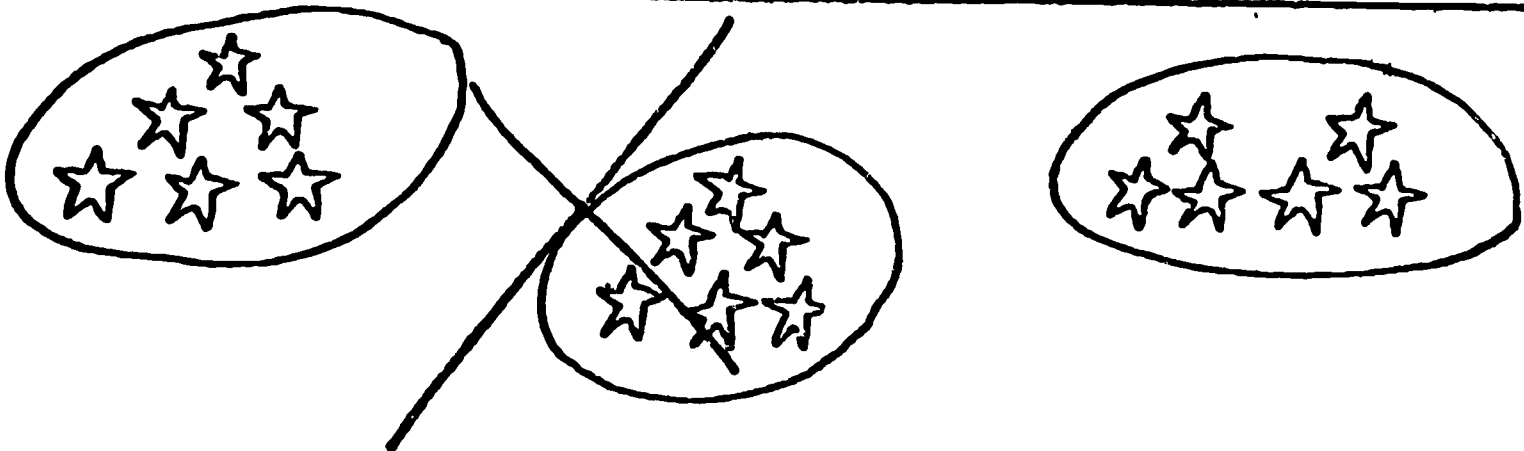
A



B

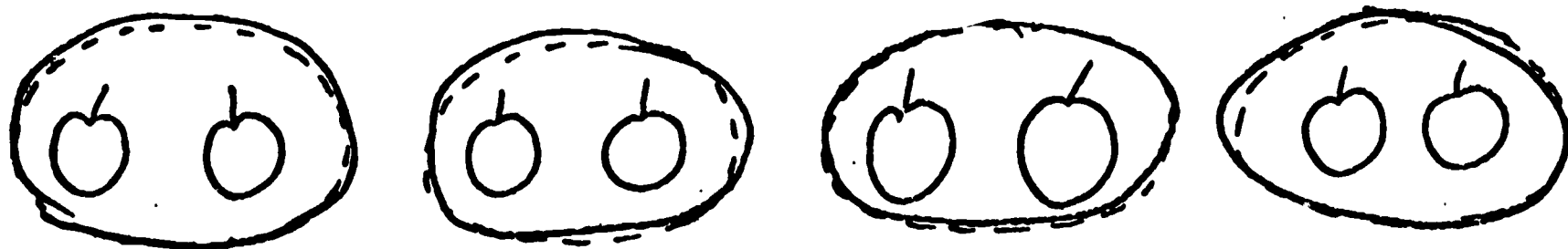


C

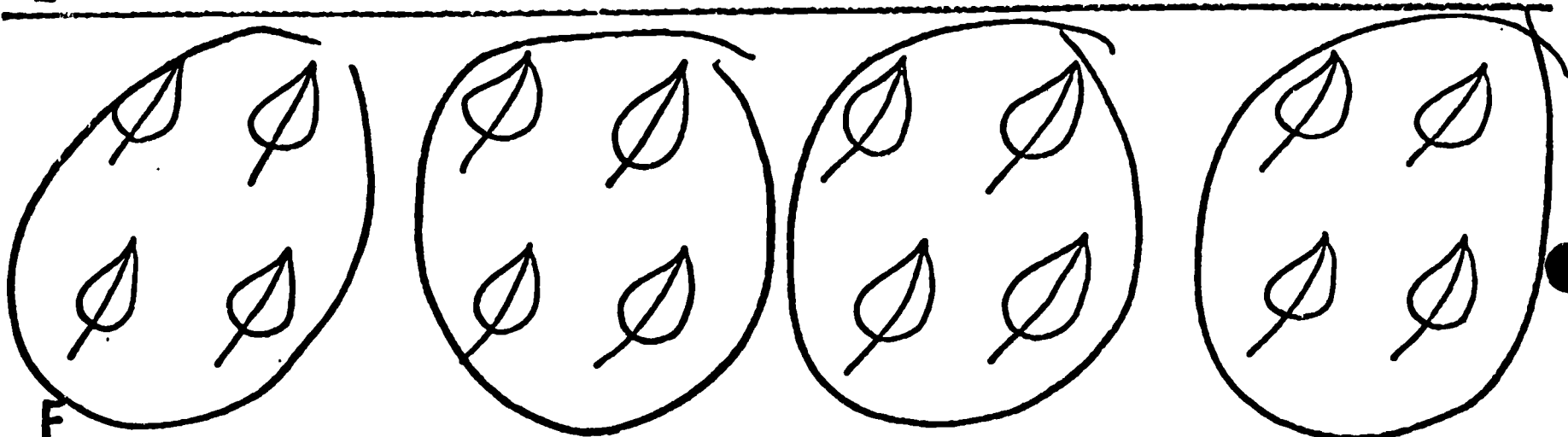


D

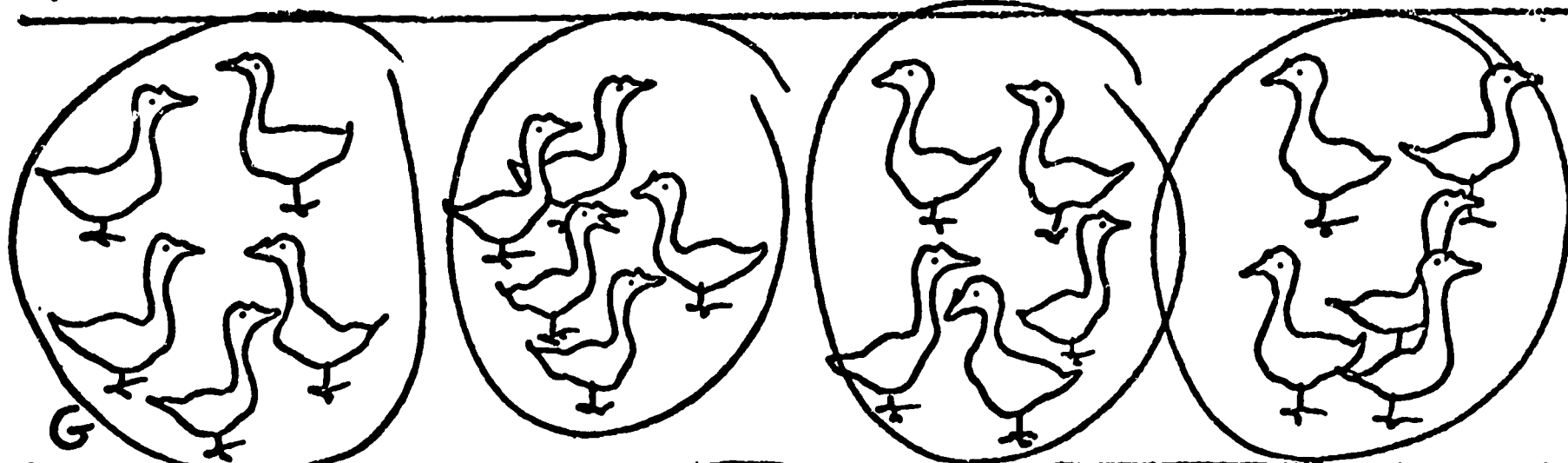
Name \_\_\_\_\_ Joe B. Date \_\_\_\_\_ Room \_\_\_\_\_ 4



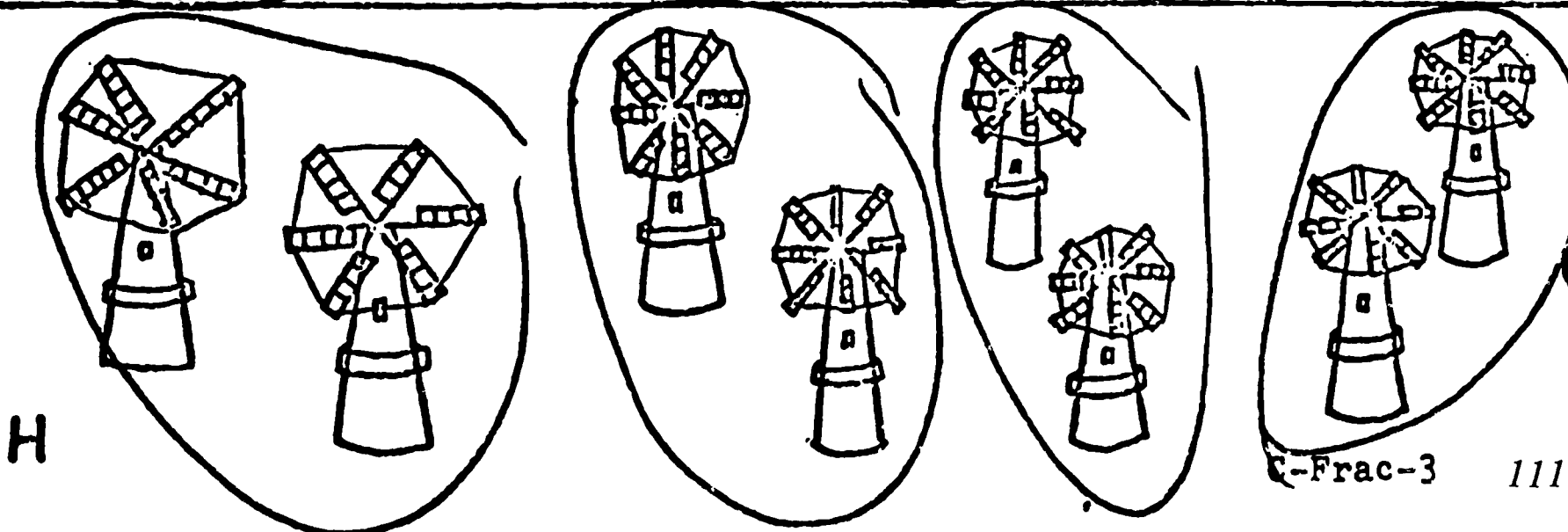
E



F



G



H

E-Frac-3



This is the CET completed by Joe and corrected by the Aide.

You record (in the role of Aide) the scores on the Prescription Sheet.

You look at Joe's work on the CET:

Joe can: PART I - Divide sets into  $1/2$ 's,  $1/3$ 's,  $1/4$ 's ; match divided set in  $1/4$ 's and  $1/3$ 's with written fraction clues.  
PART II - Divide a set into  $1/4$ 's.

Joe cannot: Match a set divided into  $1/2$ 's with written fraction name.  
Write fraction name for set divided into  $1/2$ 's.

You describe how Joe worked with this prescription: Joe appeared very confused while completing this CET.

Based on your analysis of Joe's work, you decide to:

- X   Extend prescription for the same skill.
- Assign a second CET for the same skill.
- Assign entire CET for Skill      .
- Assign Part II of CET for Skill      .
- Write initial prescription for Skill      .

Why? Joe does not demonstrate an understanding of  $1/2$ 's..

Based on the previous diagnosis of Joe's behavior, his performance on the Pretest (Skill 3, in particular) and the CET for Skill 3, you decide to prescribe the following on 2/10:

<u>Page</u>	<u>Reason</u>
1	Divides sets into $1/2$ 's.
2	Divides sets into $1/2$ 's.
15	Divides sets into $1/2$ 's. and write fraction name
9	Divides sets into $1/2$ 's, $1/3$ 's and $1/4$ 's.
11	Discriminates among sets divided into $1/2$ 's, $1/3$ 's, and $1/4$ 's.

You estimate the time needed as: 1 class period

After you recheck these five pages, you record the page number and the date on line 1 of Joe's Prescription Sheet #2.

CET I

Divide each set according to the word on the left.

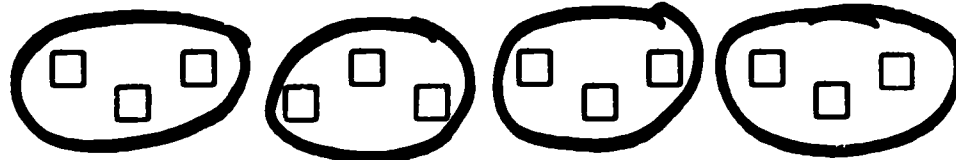
halves



thirds

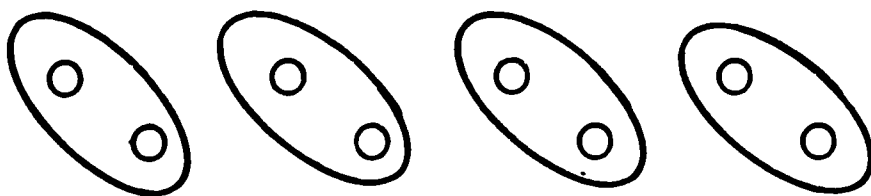


fourths



C I R C L E  C O R R E C T  B O X	TL. PTS	
	6	100%
	NO. OF PTS	
	5	83
	4	67
	3	50
	2	33
	1	17

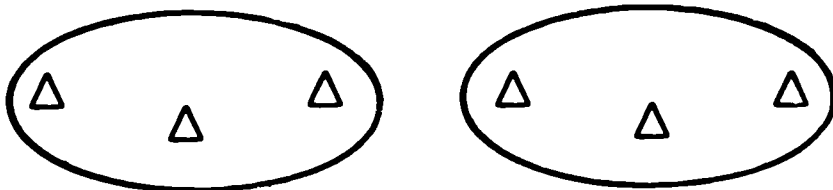
Circle the word that tells how each set is divided.



halves

fourths

thirds



halves

fourths

thirds

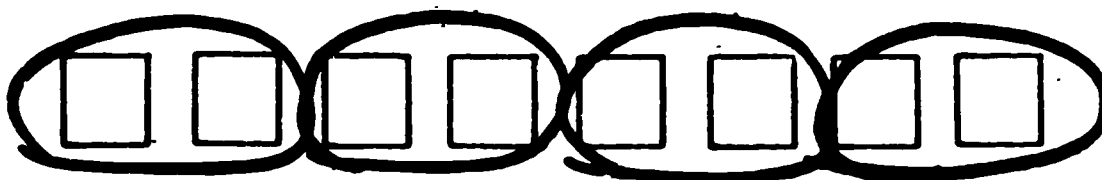


halves

fourths

thirds

Divide this set into four equal parts.



Each part is 1/4 of the whole set.

C I R C L E  C O R R E C T  B O X	TL. PTS	
	2	100%
	NO. OF PTS	
	1	50

These are the five skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Divide simple sets in halves, thirds and fourths.

Joe cannot: Divide sets that contain massed objects; divide sets into mixed fractional parts.

You describe how Joe worked with this prescription: Joe worked too rapidly on this material and made errors of incompleteness, omission.

Based on your analysis of Joe's work, you decide to:

- ☒ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for Skill \_\_\_\_.

Why? Joe gets confused in dividing sets with many objects; he needs to learn to divide sets with accuracy.

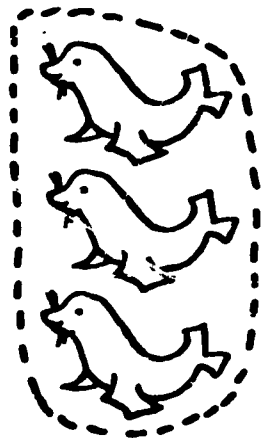
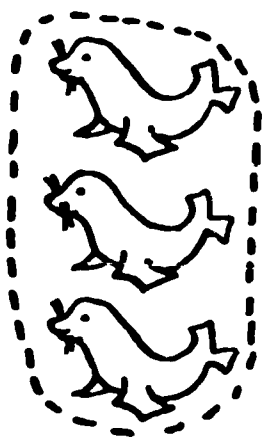
Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 3, in particular) and on the skill sheets for this skill, you decide to prescribe the following on 2/12:

<u>Page</u>		<u>Reason</u>
Blocks	12	{ A group of four students need work in fractional parts ( $1/4$ , $1/3$ , $1/2$ ). You have prepared a brief review and a game sheet for a small group instructional setting with the blocks as manipulative aids.
Teacher Page	03	

You estimate the time needed for the small group as: approximately 15-20 minutes

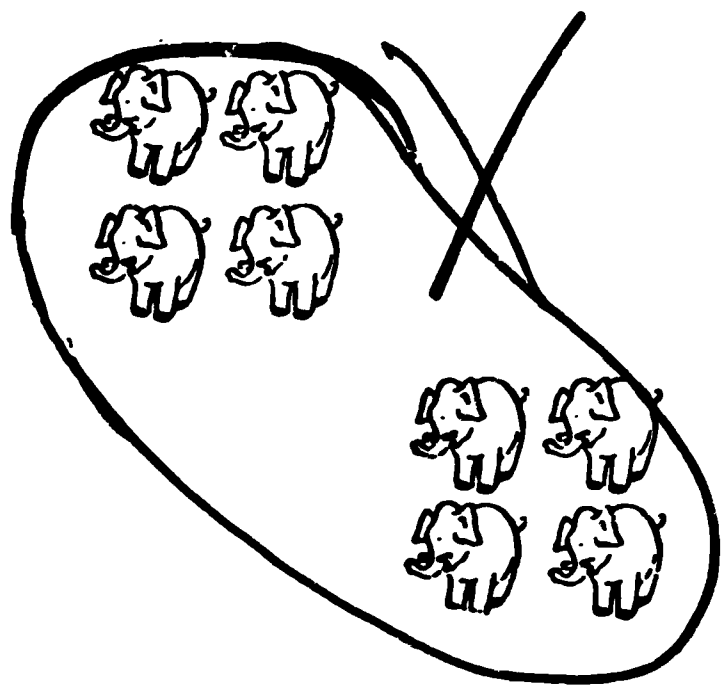
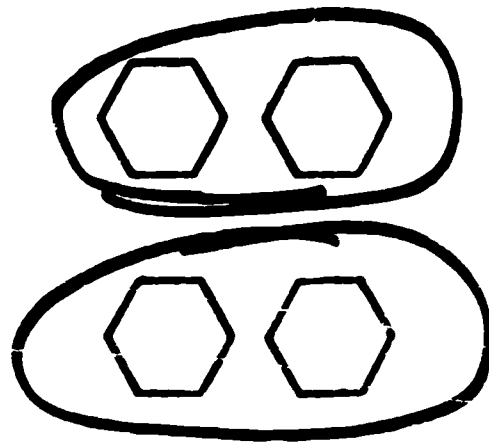
After you recheck this plan, you record the page numbers and the date on lines 6-7 of Joe's Prescription Sheet.

Count the objects in each set. Now divide the sets into two parts equal in number. Each part is called one-half. Draw a ring around each half of the sets below.

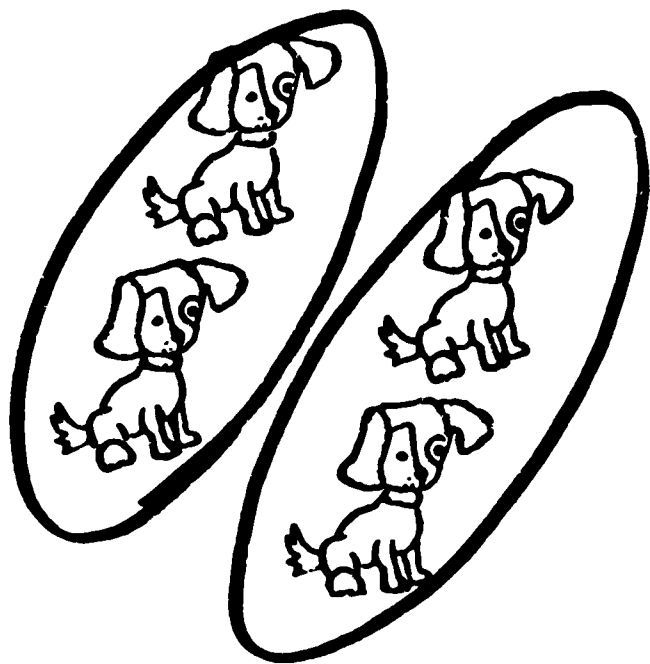
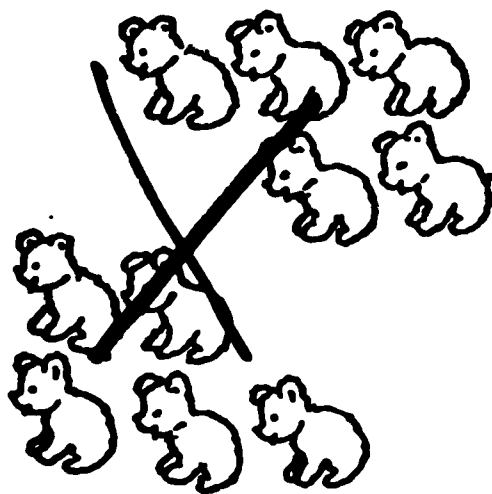
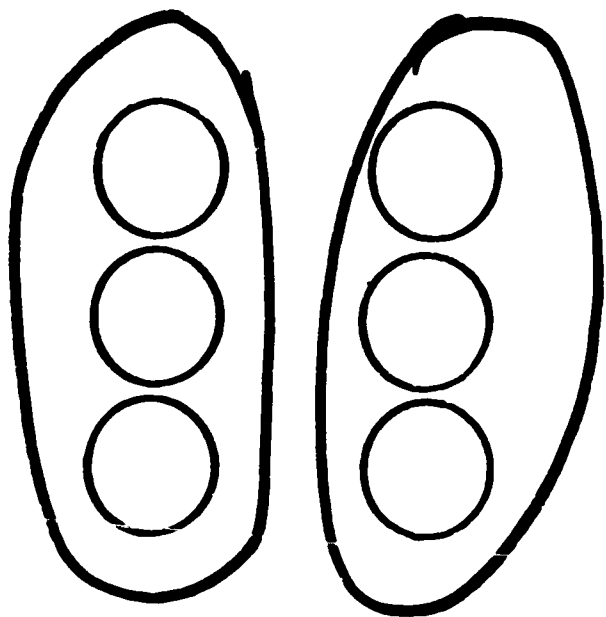
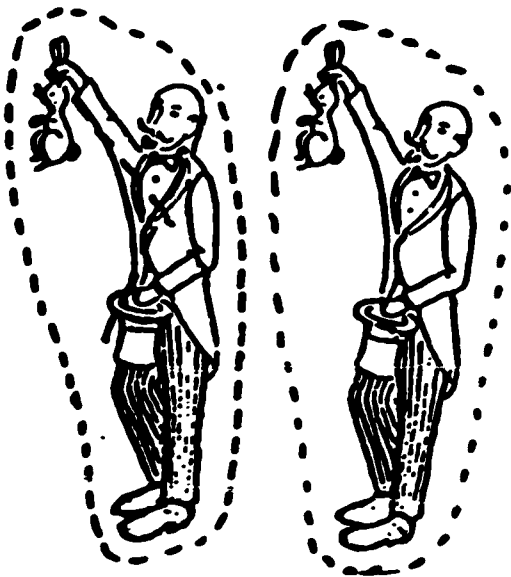


one-half

one-half

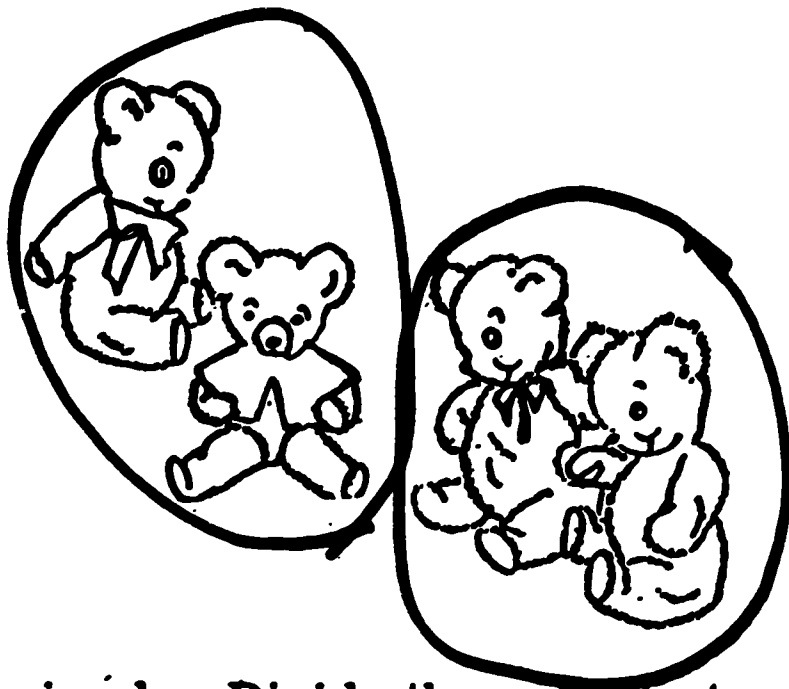


When you divide a set into two parts equal in number, each part is called one-half. Draw a ring around each half of the sets below.



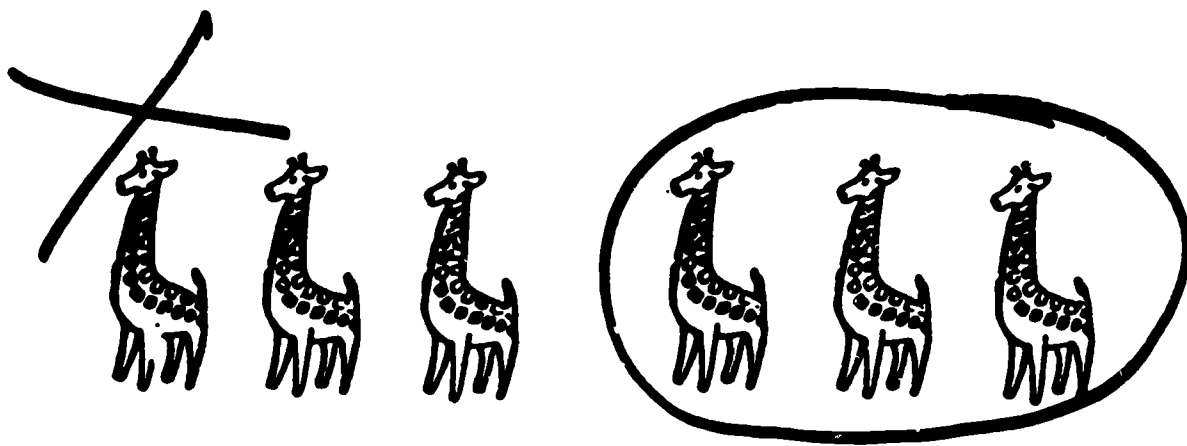
For extra practice, do Page 15.

Count the animals in this set.



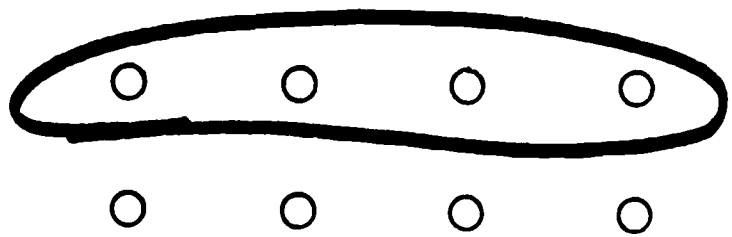
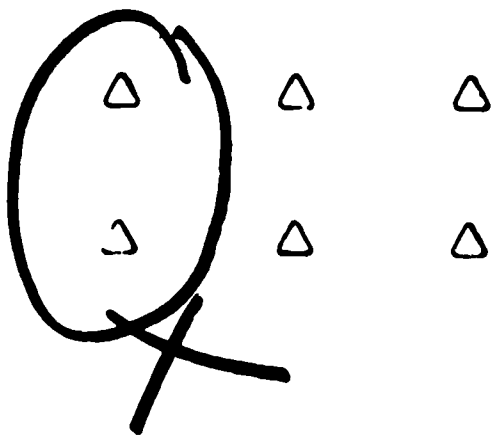
There are 4 animals. Divide the set into two parts of equal number. Each part is called one-half.

Count the animals in this set.

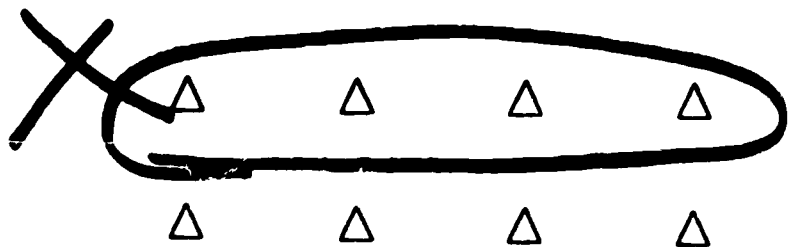
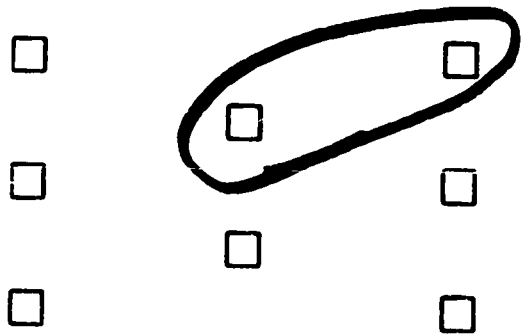


There are 6 animals. Divide the set into two parts of equal number. Each part is called one-half.

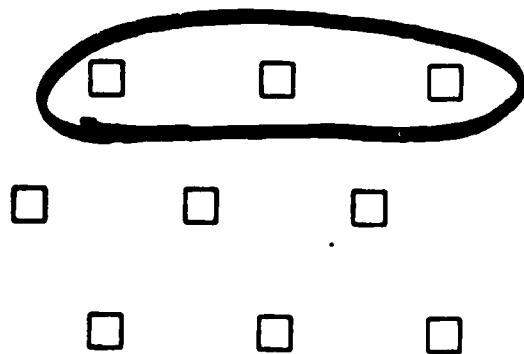
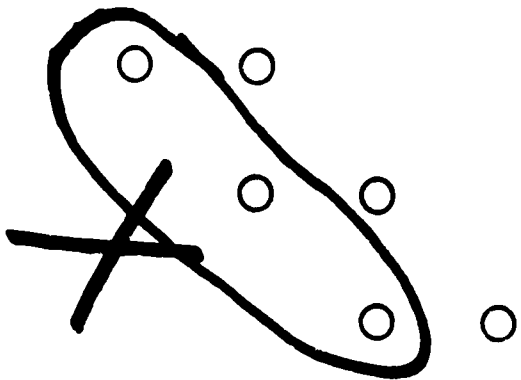
Draw a ring around one-half ( $\frac{1}{2}$ ) of each set.



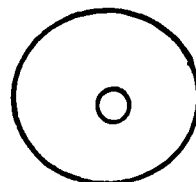
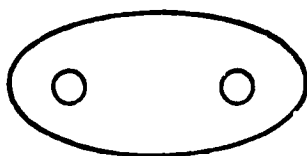
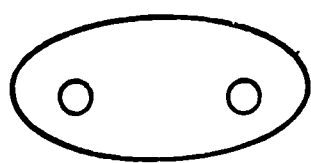
Draw a ring around one-fourth ( $\frac{1}{4}$ ) of each set.



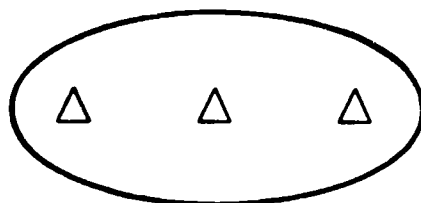
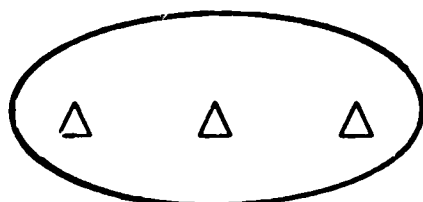
Draw a ring around one-third ( $\frac{1}{3}$ ) of each set.



One-half means one of two parts equal in number. Is each set divided into halves? Circle yes or no.

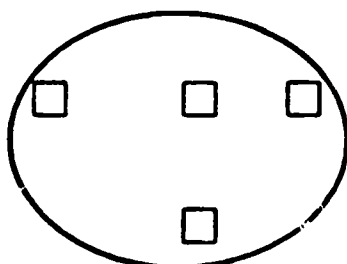
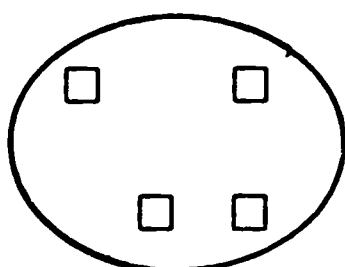


yes



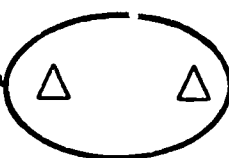
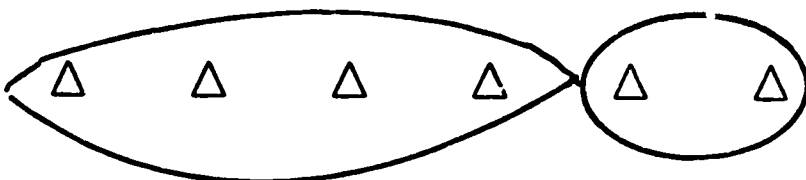
yes

no



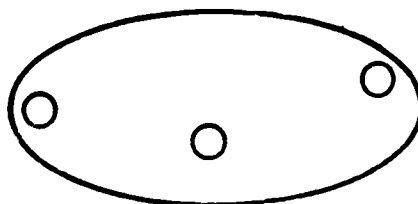
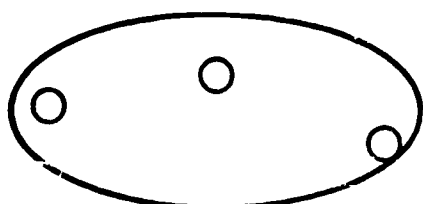
yes

no



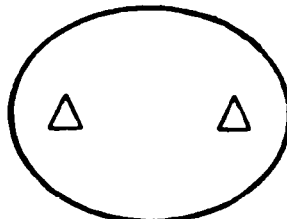
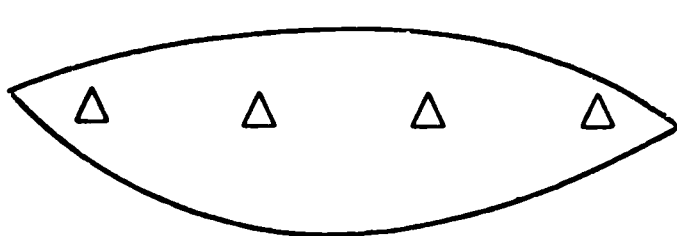
yes

no



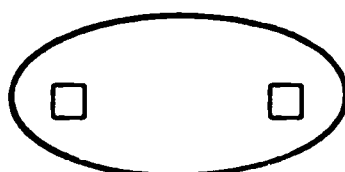
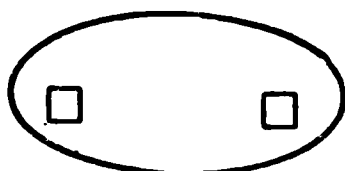
yes

no



yes

no



yes

no



This is the teacher-made sheet that was completed by Joe in the small group setting. You checked his work before releasing him from the group and recorded the score on his Prescription Sheet at that time.

Joe can: Divide sets of many objects into fractional parts ( $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ) by matching fraction name.

Joe cannot: \_\_\_\_\_

You describe how Joe worked with this prescription: Joe worked very well in the small group; being with the other students allowed him to do some tutoring, which provided encouragement and motivation for him.

Based on your analysis of Joe's work, you decide to:

- ☐ Revise original prescription
- ☐ Extend prescription
- ☒ Assign a CET for Skill 3

Why? Joe's performance on the materials indicates mastery of Skill 3.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 3, in particular) and on these skill sheets, you decide to prescribe the following on 2/2:

<u>Page</u>	<u>Reason</u>
19 CET	To test mastery of Skill 3

You estimate the time needed as: 20 minutes maximum

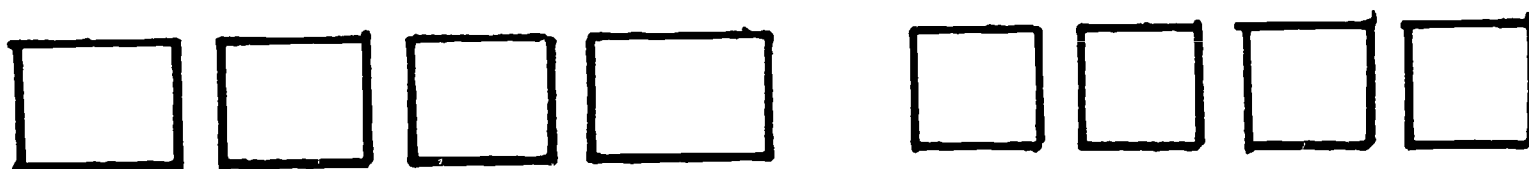
After you recheck this CET, you record the page number and the date on line 8 of Joe's Prescription Sheet.

Name Joe Bean

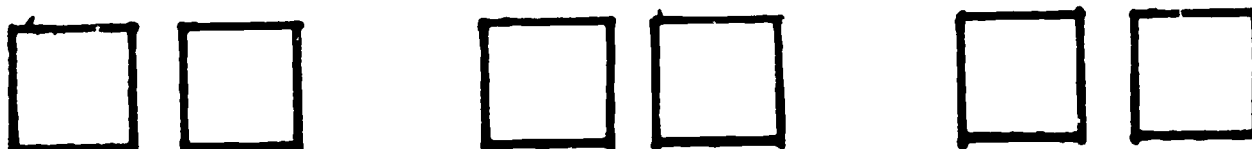
Grade 3

Directions: Get an aid from the math table that can be used to show fractions. Use it to help you work these problems.

1. Arrange your blocks in the space below to show one-half ( $1/2$ ):



2. Arrange your blocks in the space below to show one-third ( $1/3$ ):



3. Arrange your blocks in the space below to show one-fourth ( $1/4$ ):



Show this to the teacher.

4 4

This is the CET completed by Joe and corrected by the Aide.

You record (in the role of Aide) the scores on the Prescription Sheet.

You look at Joe's work on the CET:

Joe can: PART I - Divide sets with fraction name clues of halves, thirds, fourths; match fraction names and divided sets.

PART II - - -

Joe cannot: Write the fraction  $1/3$ .

You describe how Joe worked with this prescription: Joe worked quickly on this second CET for this skill.

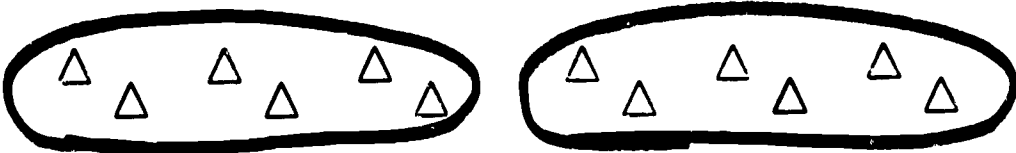
Based on your analysis of Joe's work, you decide to:

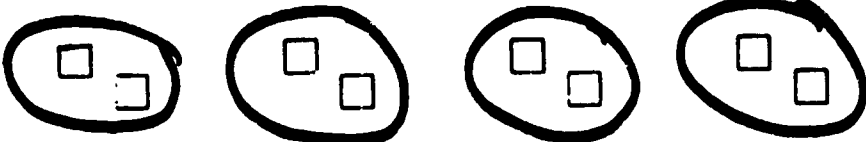
- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for skill \_\_\_\_.
- ☐ Assign Part II of CET for skill \_\_\_\_.
- ☒ Write initial prescription for skill 4.

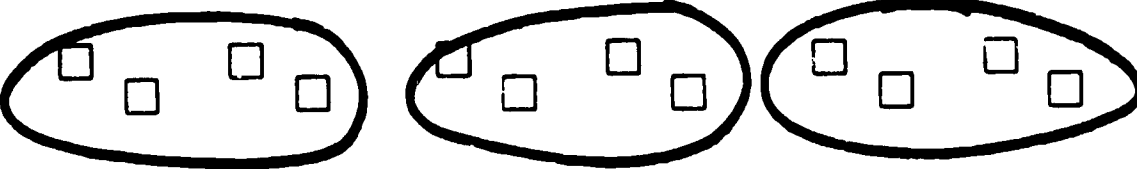
Why? Pretest score (Skill 4) was 100%, but Part II of the CET for Skill 3 was only 50%; Joe may not retain his mastery of this material.

CET II

Divide each set as the word tells you.

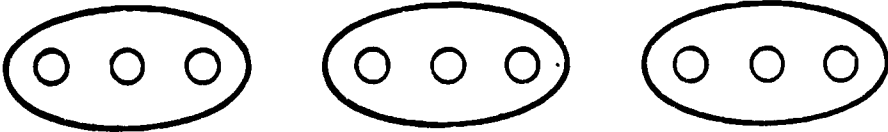
halves 

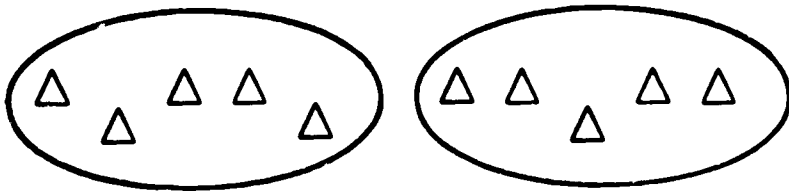
fourths 

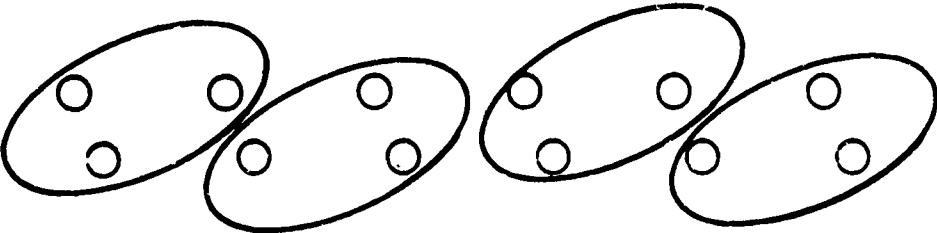
thirds 

C I R C L E  C O R R E C T N O B O X	TL. PTS.	
	6	100%
	NO. OF PTS.	
	5	83
	4	67
	3	50
	2	33
	1	17

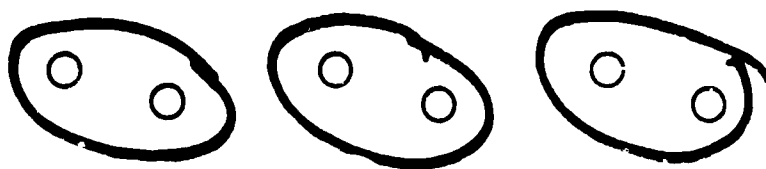
Circle the word that tells how each set is divided.

 halves  
**thirds**  
fourths

 **halves**  
thirds  
fourths

 halves  
thirds  
**fourths**

Divide the set into three equal parts.



Each part is 1/3 of the whole set.

C I R C L E  C O R R E C T N O B O X	TL. PTS.	
	2	100%
	NO. OF PTS.	
	1	50

**This is a copy of the STS booklet for Skill 4.**

**You examine all the skill sheets and STS sheets (pp. 14 & 15) in the booklet to become familiar with materials for this skill.**

**Based on the previous diagnosis of Joe's behavior, his performance on the Pretest (Skill 4, in particular) and Part 2 of CET for Skill 3, you decide to prescribe the following on 2/15:**

<u>Page</u>	<u>Reason</u>
Student Page	Introduces skill; previews work
1	Divides sets into halves; writes $1/2$
4	Divides sets into fourths; writes $1/4$
5	Divides sets into thirds; writes $1/3$

**You estimate the time needed as: 30 minutes**

**After you recheck these four pages, you record the page numbers and the date on lines 9-12 of Joe's Prescription Sheet.**

3

SCHOOL CODE

NAME

NUMBER

CLASS



*improving the quality of school instruction*

**MATHEMATICS**

# Standard Teaching Sequence Booklet

**TEACHER'S EDITION**

**LEVEL C**

**FRACTIONS (08)**

**SKILL 4**

Based upon materials developed by The Mathematics Curriculum Staff,  
Learning Research and Development Center, University of Pittsburgh; Joseph  
L. Lipson, Ph.D., Director; Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome B. Kaplan, Ed.D., Teachers College, Columbia University

Appleton-Century-Crofts



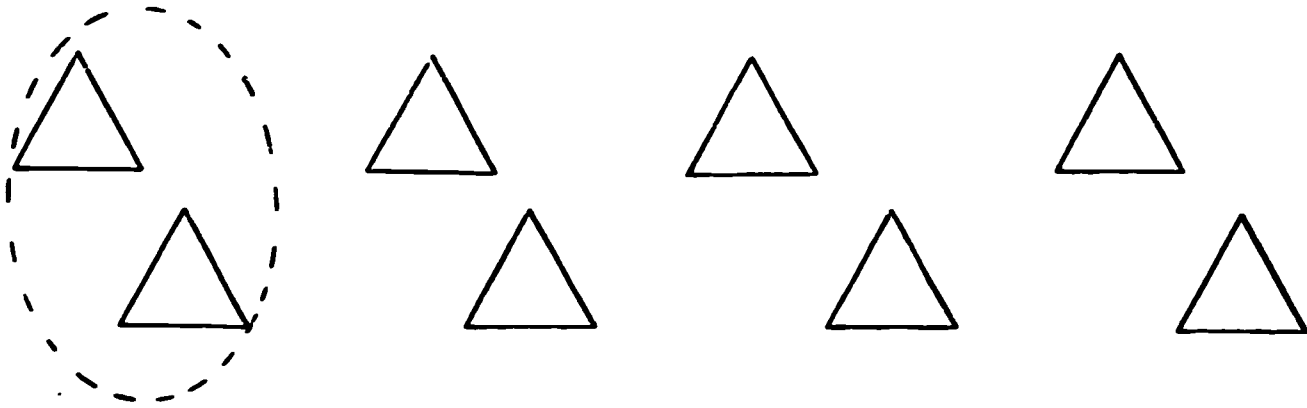
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## DEVELOPMENTAL EDITION

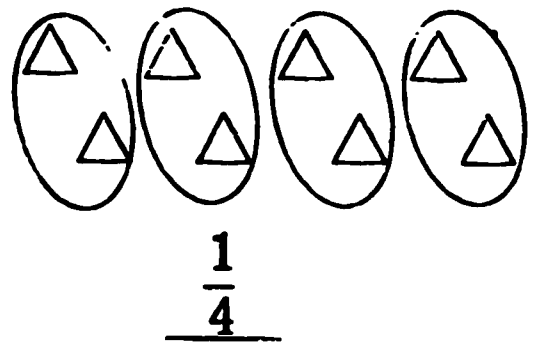
## TO THE STUDENT

Draw circles to divide this set into four parts equal in number.

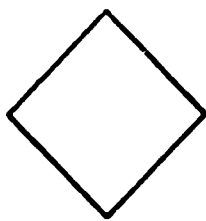
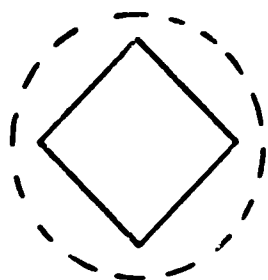


Each circle contains \_\_\_\_\_ of this set.

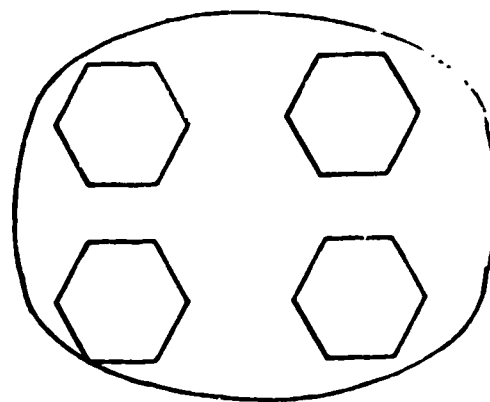
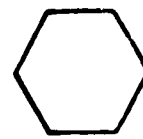
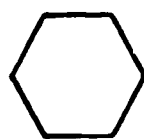
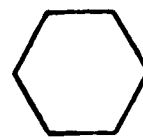
### Answers



Circle one-half of each set. Write the fraction of the set you have circled in the blank.

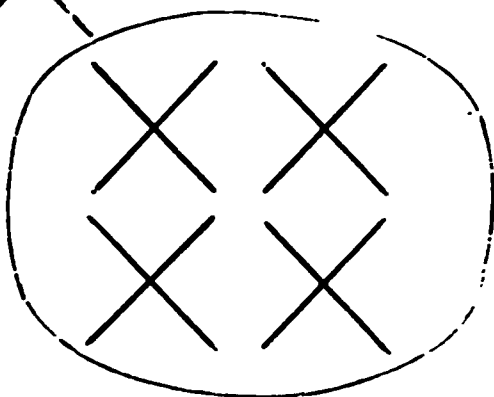
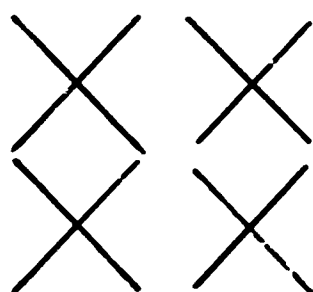


$\frac{1}{2}$



$\frac{1}{2}$

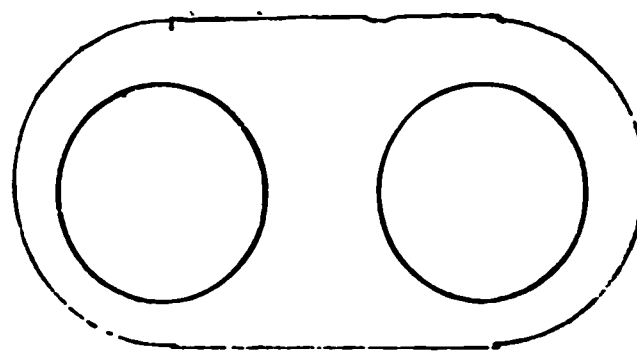
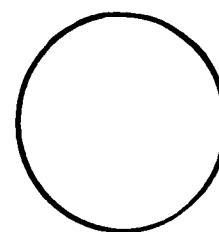
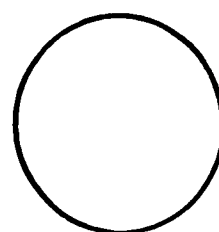
any  $\frac{1}{2}$



$\frac{1}{2}$

$\frac{1}{2}$  of this set has 4 things.

any  $\frac{1}{2}$

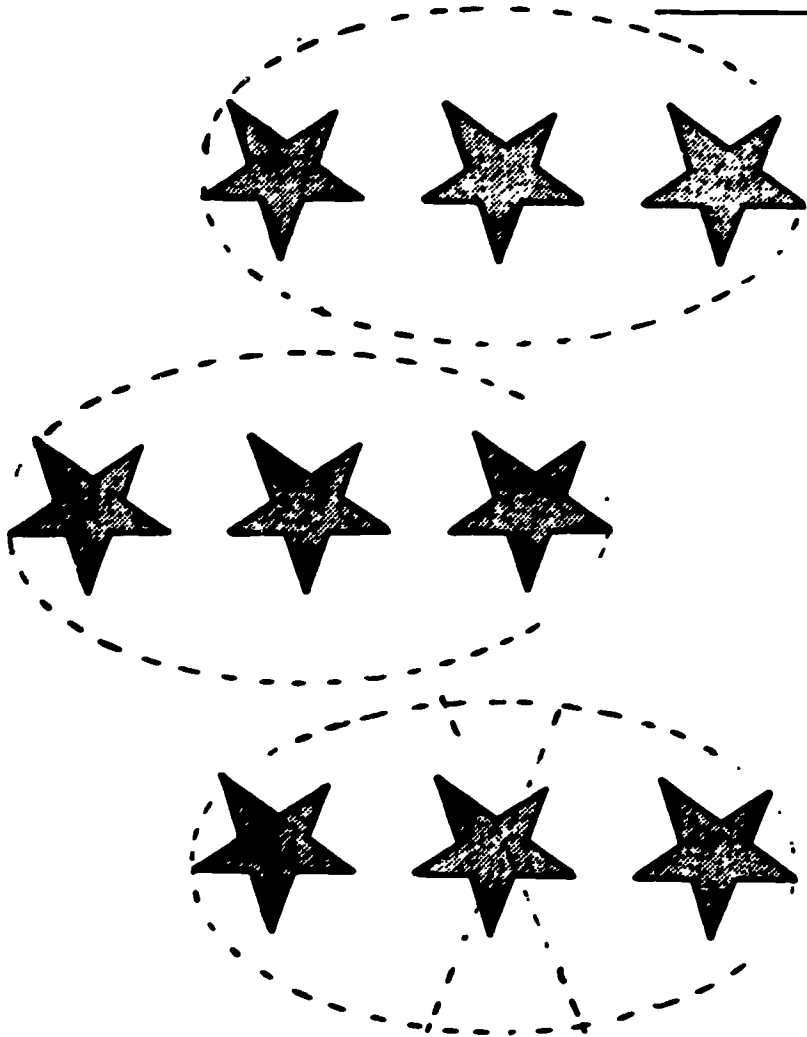


$\frac{1}{2}$

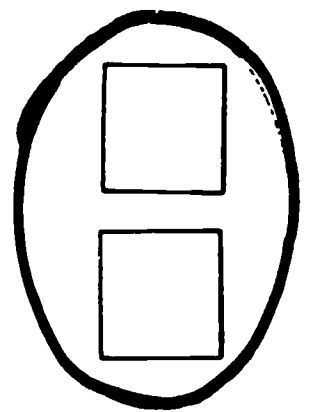
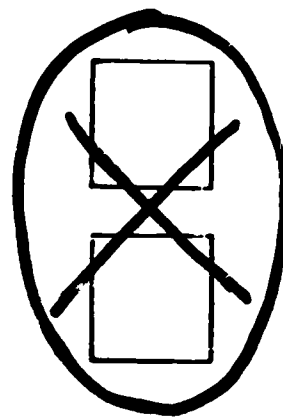
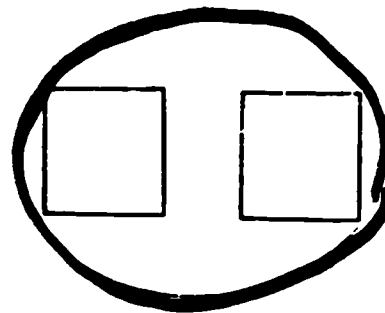
$\frac{1}{2}$  of this set has 2 things.



Draw circles to divide each set into 3 parts which are equal in number. Put an X on one-third of each set.

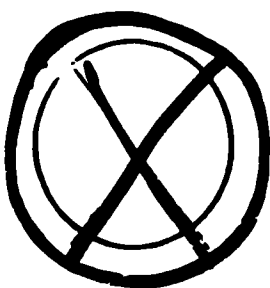
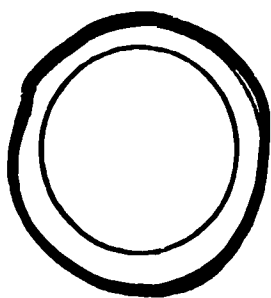
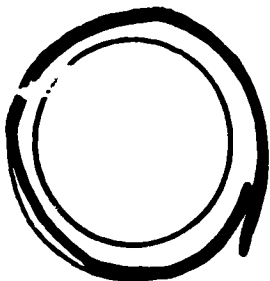


(any  $\frac{1}{3}$ )

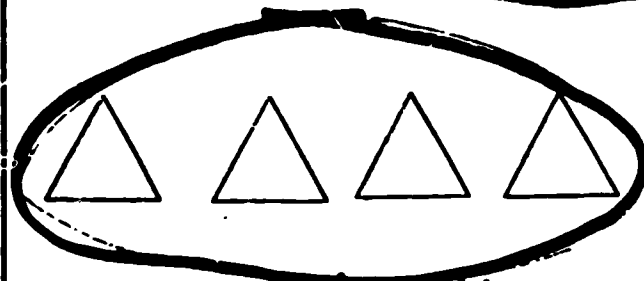
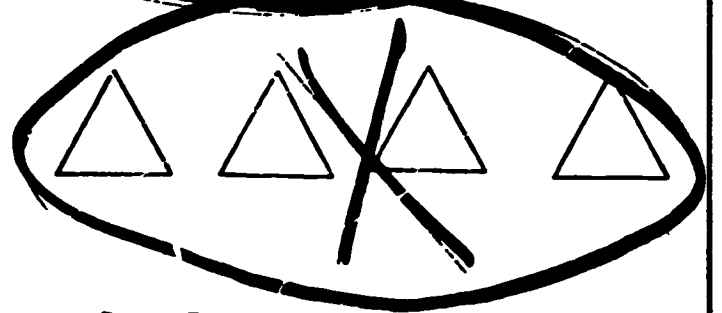
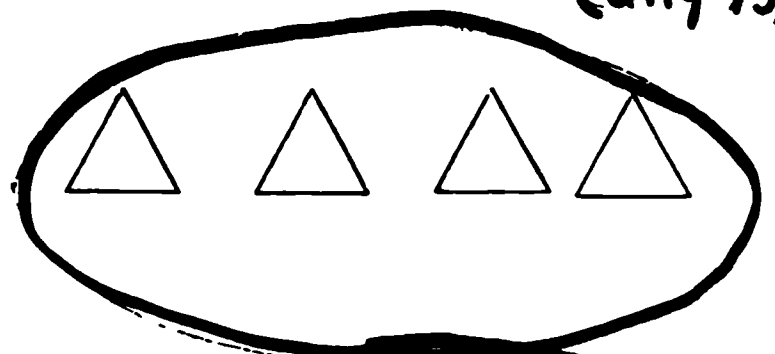


(any  $\frac{1}{3}$ )

(any  $\frac{1}{3}$ )



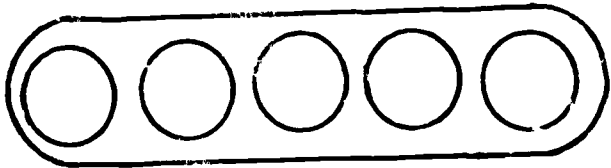
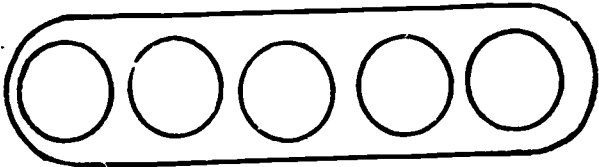
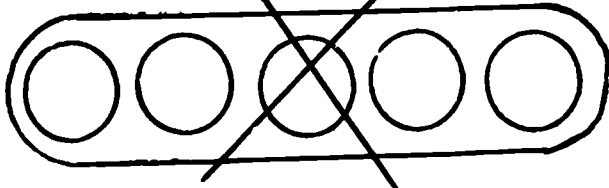
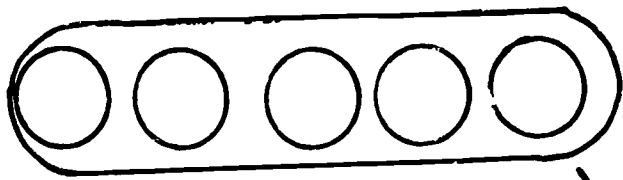
(any  $\frac{1}{3}$ )



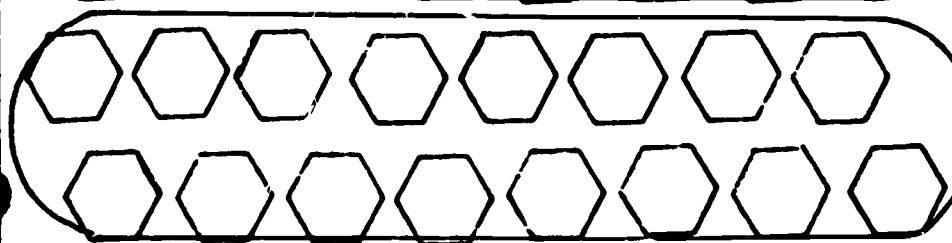
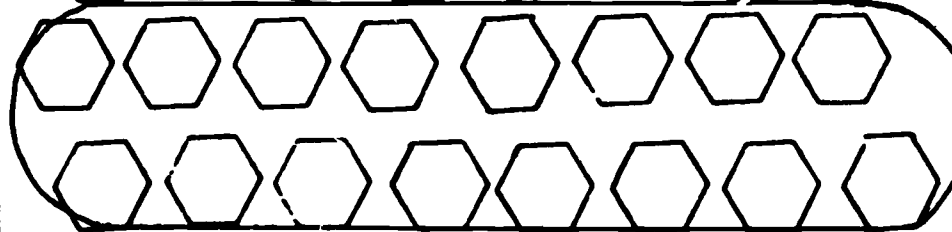
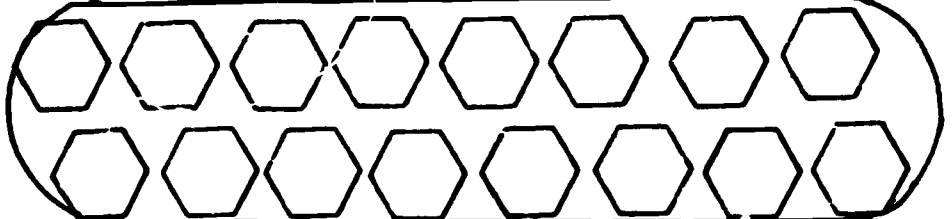
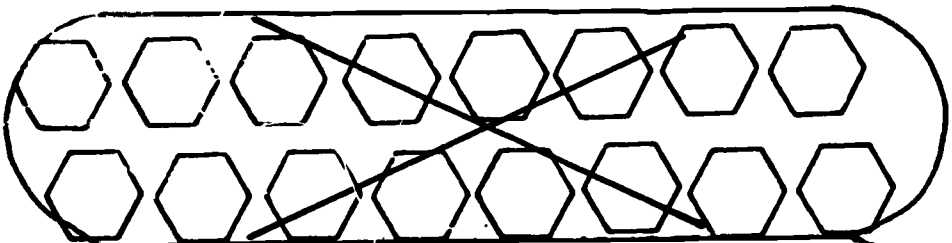
Scoring: 1 pt. for circling process in each set; 1 pt. X-ing process in each set

Draw circles to divide each set into 4 parts equal in number.

Put an X on one-fourth of each set.

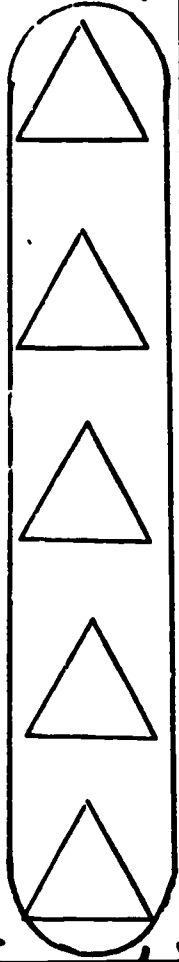
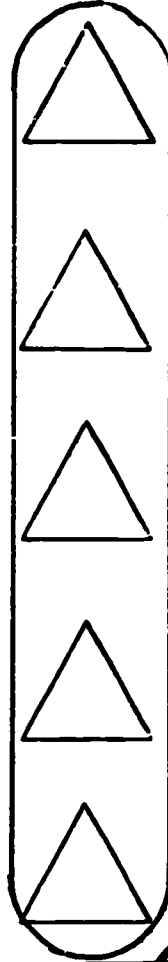
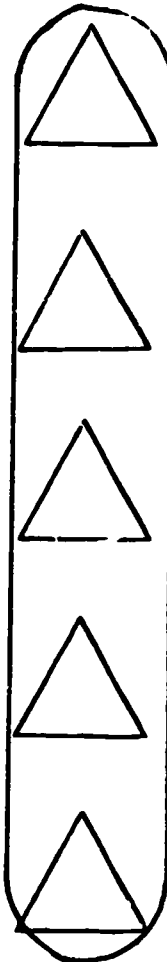
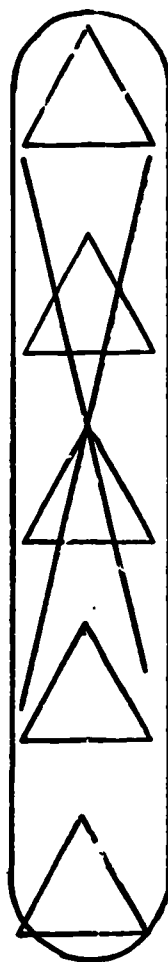


(any 1/4)

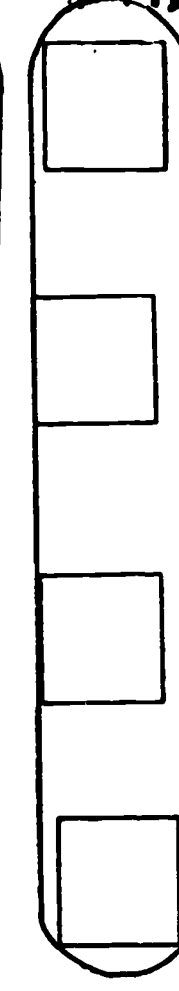
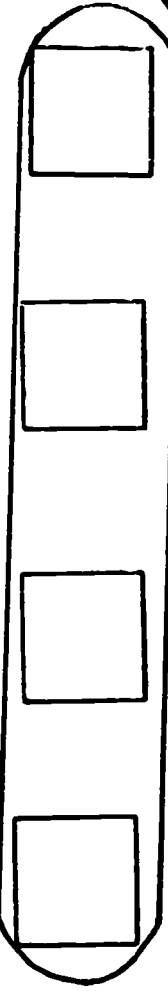
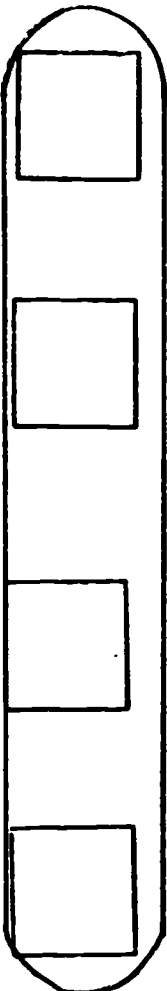
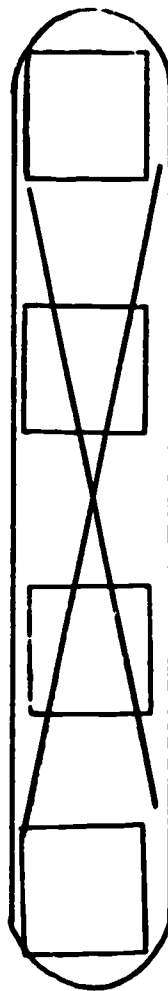


(any 1/4)

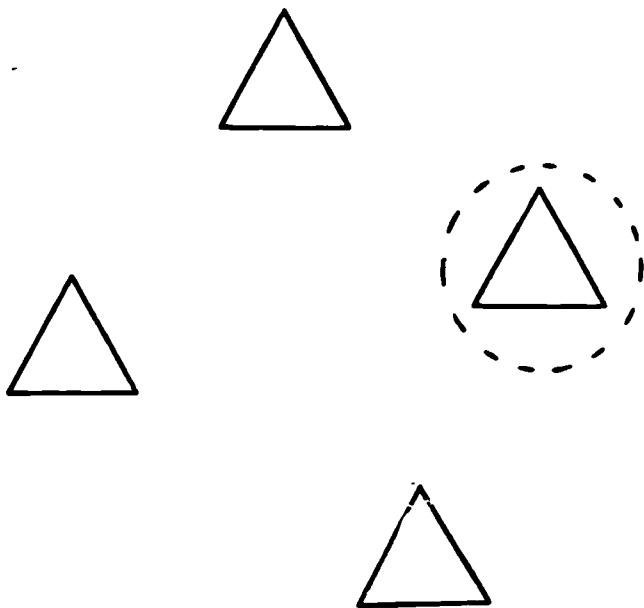
(any 1/4)



(any 1/4)

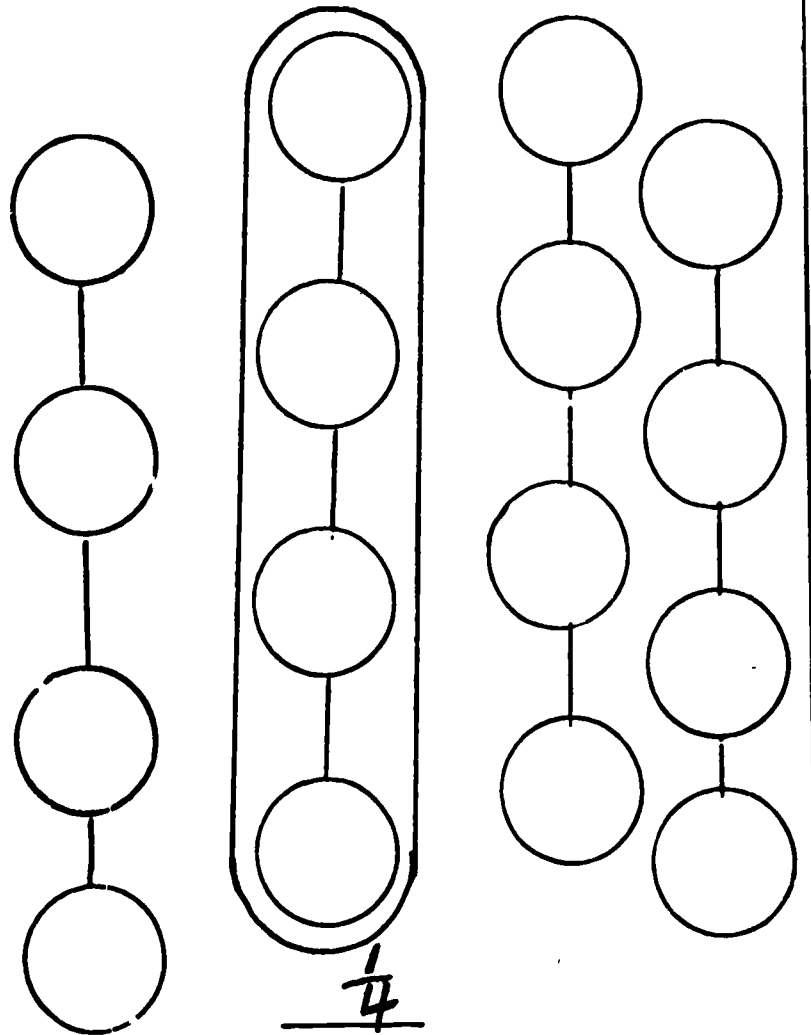


Circle one-fourth of each set. Write the fraction of the part of the set you circled in the blank.



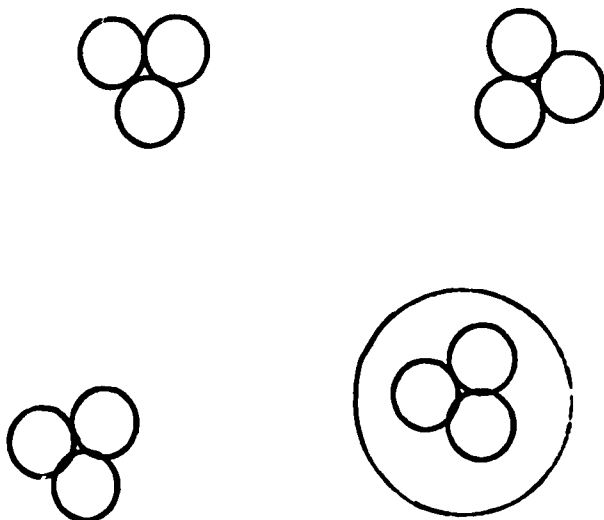
$\frac{1}{4}$

(any  $\frac{1}{4}$ )



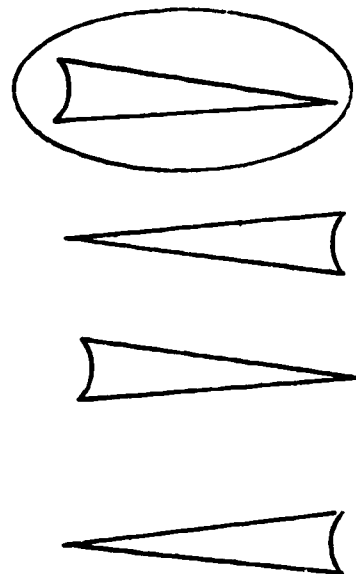
$\frac{1}{4}$

(any  $\frac{1}{4}$ )



$\frac{1}{4}$

(any  $\frac{1}{4}$ )

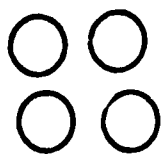
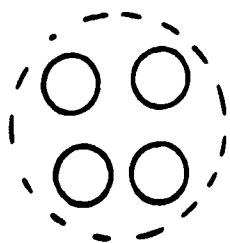
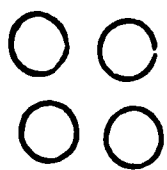


$\frac{1}{4}$

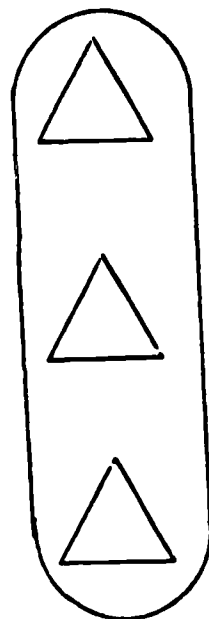
(any  $\frac{1}{4}$ )

Circle one-third of each set.

Write the fraction of the part of the set you have circled in the blank.

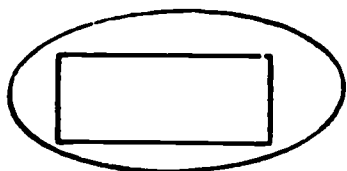


$\frac{1}{3}$



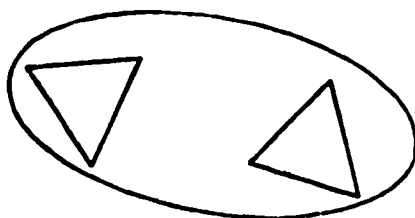
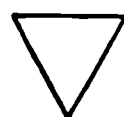
$\frac{1}{3}$

(any  $\frac{1}{3}$ )



(any  $\frac{1}{3}$ )

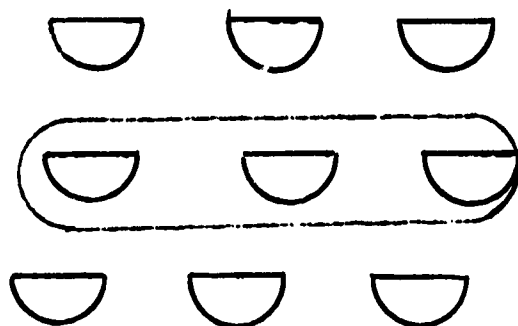
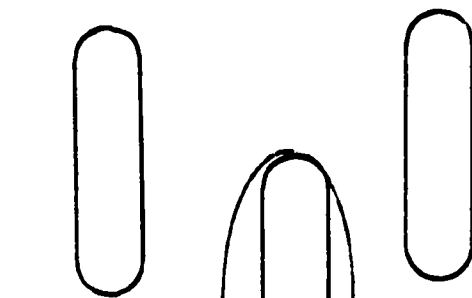
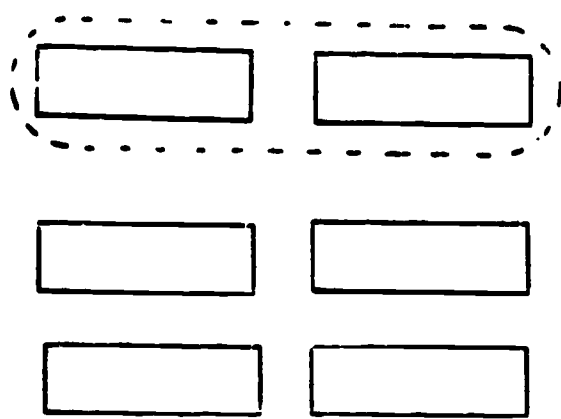
$\frac{1}{3}$



$\frac{1}{3}$

(any  $\frac{1}{3}$ )

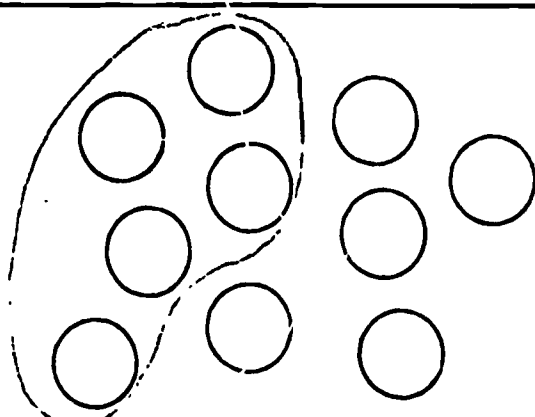
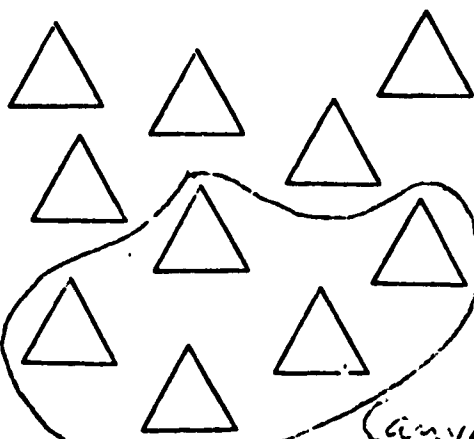
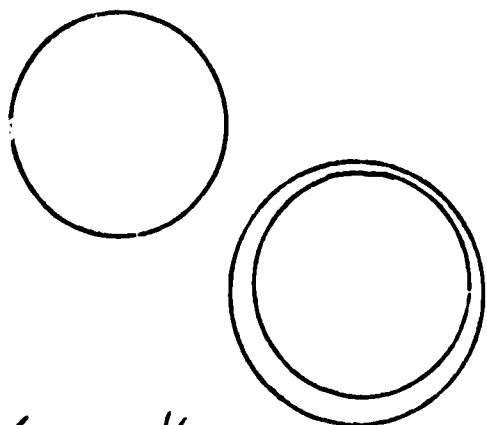
Circle  $\frac{1}{3}$  of each set below.



(any  $\frac{1}{3}$ )

(any  $\frac{1}{2}$ )

Circle  $\frac{1}{2}$  of each set below.

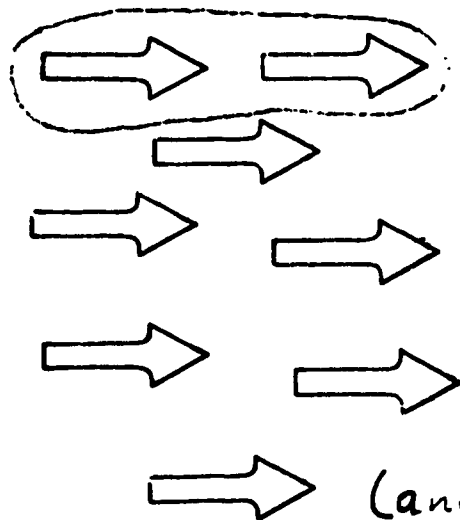
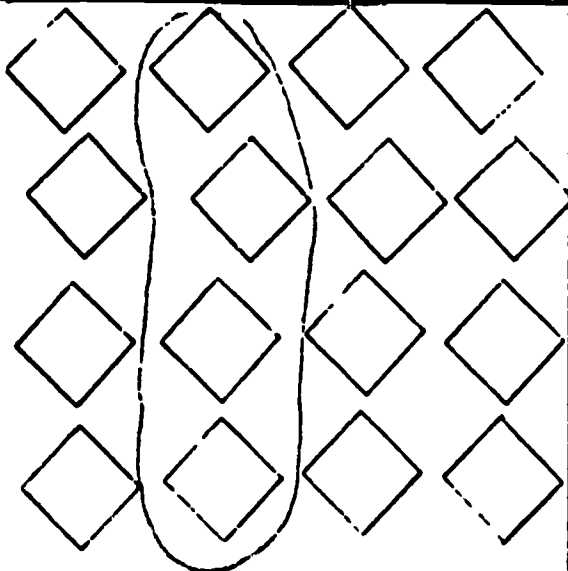
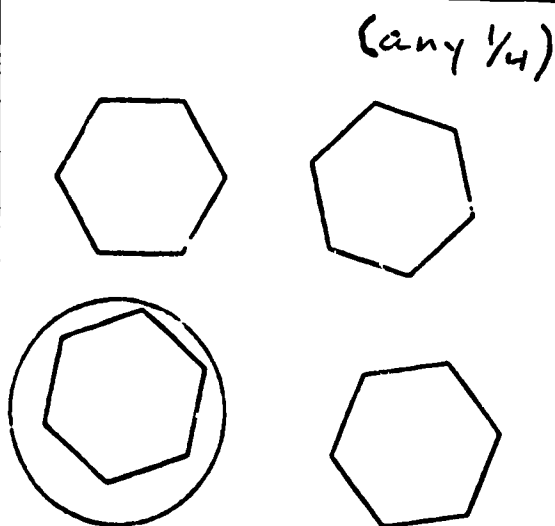


(any  $\frac{1}{2}$ )

(any  $\frac{1}{2}$ )

(any  $\frac{1}{2}$ )

Circle  $\frac{1}{4}$  of each set below.



(any  $\frac{1}{4}$ )



(any  $\frac{1}{4}$ )

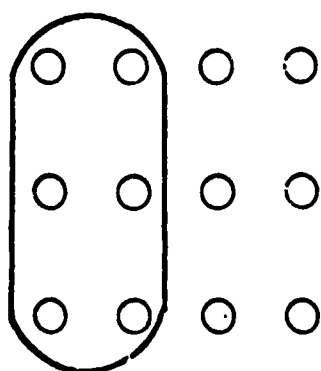
You circled 1  
out of 4.


You circled 4  
out of 16. (any  $\frac{1}{4}$ )

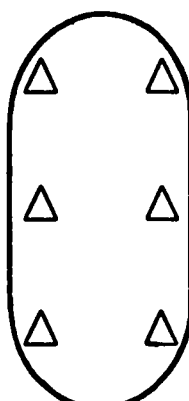
You circled 2  
out of 8.

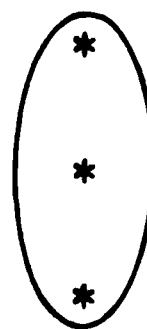
Put an X on the fraction that describes the circled part of each set.

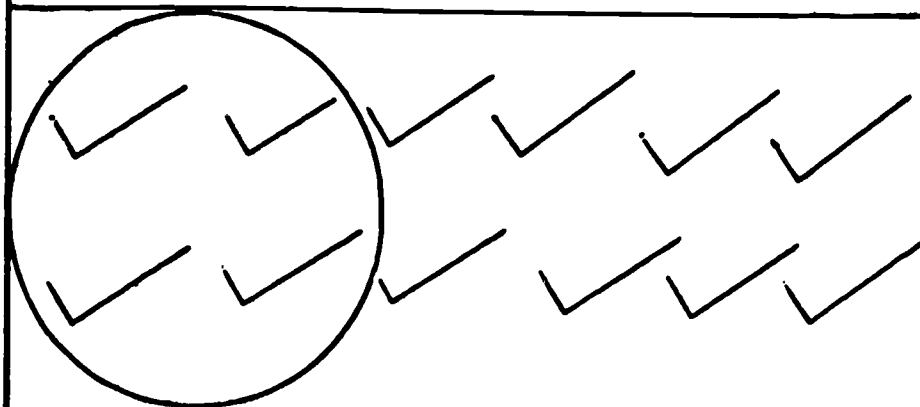


 $\frac{1}{2}$ 
 ~~$\frac{1}{3}$~~ 
 $\frac{1}{4}$


 ~~$\frac{1}{2}$~~ 
 $\frac{1}{3}$ 
 $\frac{1}{4}$

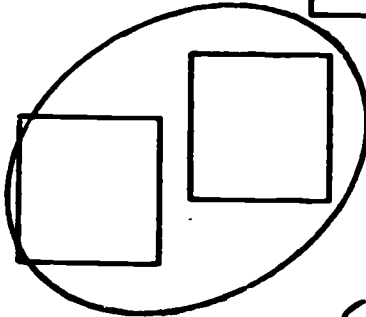
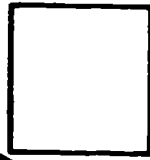
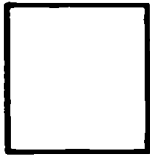
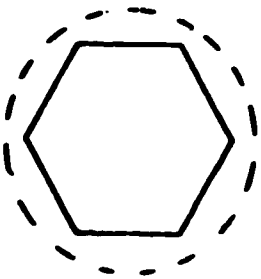
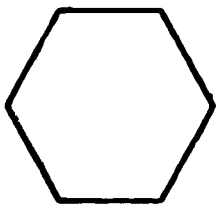

 $\frac{1}{3}$ 
 $\frac{1}{2}$ 
 ~~$\frac{1}{4}$~~


 ~~$\frac{1}{3}$~~ 
 $\frac{1}{4}$ 
 $\frac{1}{2}$

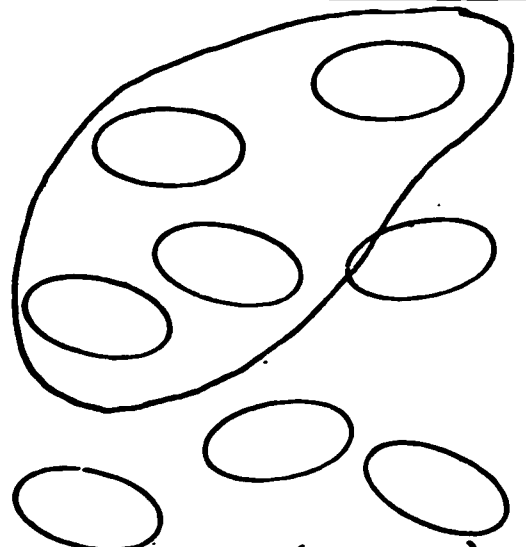

 $\frac{1}{2}$ 
 ~~$\frac{1}{4}$~~ 
 $\frac{1}{3}$


 $\frac{1}{4}$ 
 $\frac{1}{2}$ 
 ~~$\frac{1}{3}$~~

Circle  $\frac{1}{2}$  of the objects in each set.

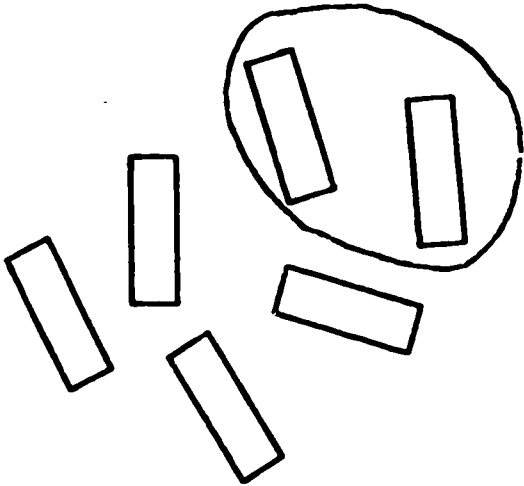


(any  $\frac{1}{2}$ )

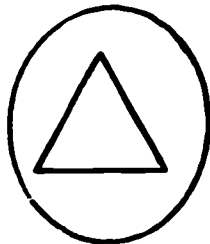


(any  $\frac{1}{2}$ )

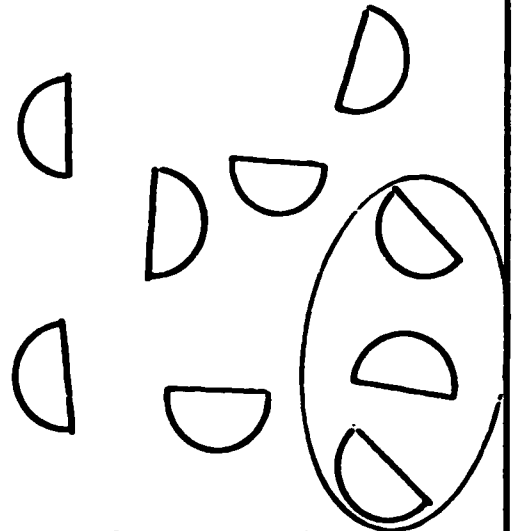
Circle  $\frac{1}{3}$  of the objects in each set.



(any  $\frac{1}{3}$ )

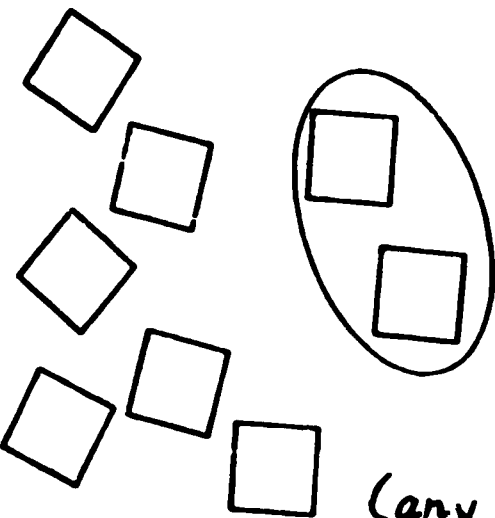


(any  $\frac{1}{3}$ )

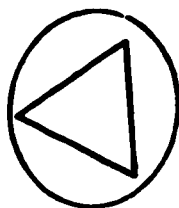


(any  $\frac{1}{3}$ )

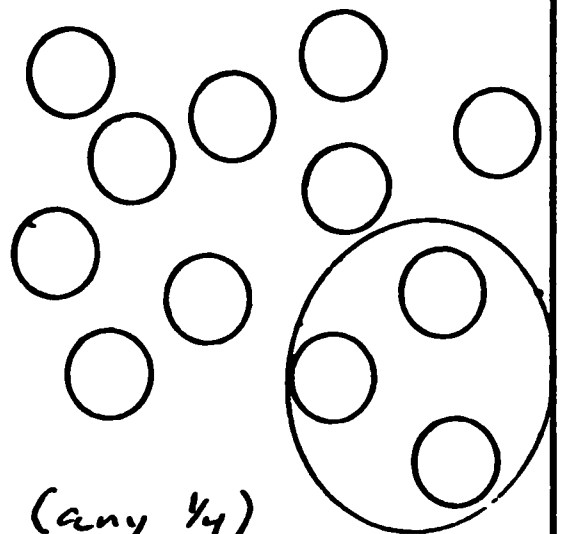
Circle  $\frac{1}{4}$  of the objects in each set.



(any  $\frac{1}{4}$ )



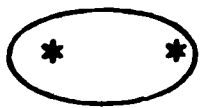
(any  $\frac{1}{4}$ )



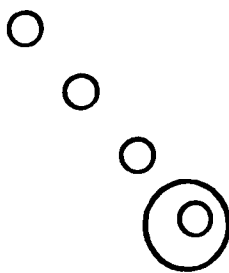
(any  $\frac{1}{4}$ )

For extra practice, do Page 11.

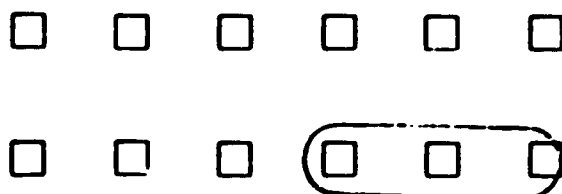
Circle  $\frac{1}{4}$  of the objects in each set.



(any  $\frac{1}{4}$ )

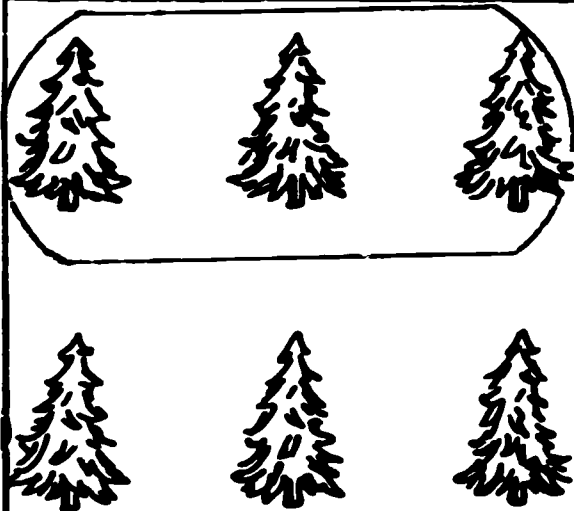


(any  $\frac{1}{4}$ )

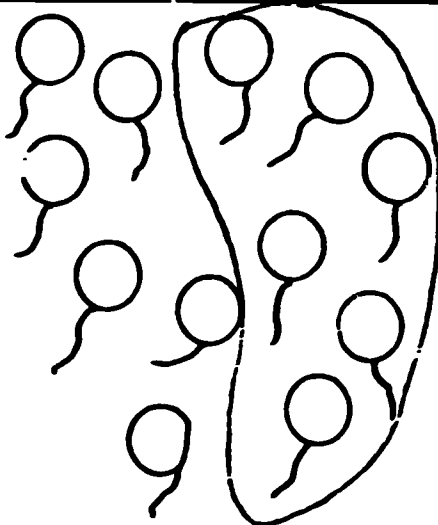


(any  $\frac{1}{4}$ )

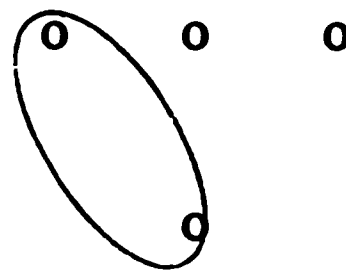
Circle  $\frac{1}{2}$  of the objects in each set.



(any  $\frac{1}{2}$ )

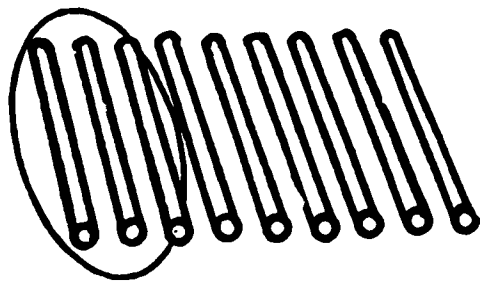


(any  $\frac{1}{2}$ )

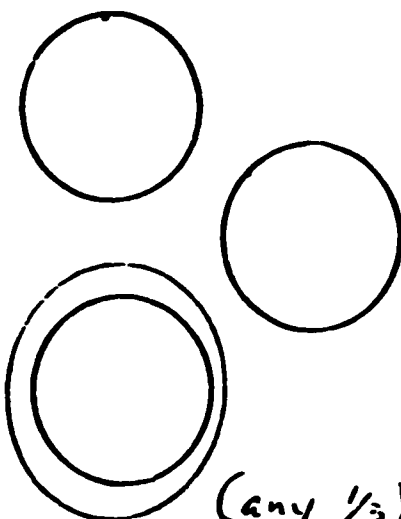


(any  $\frac{1}{2}$ )

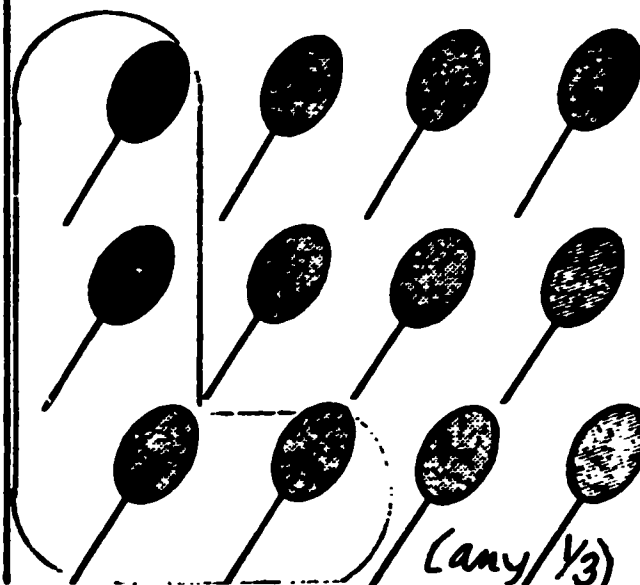
Circle  $\frac{1}{3}$  of the objects in each set.



(any  $\frac{1}{3}$ )



(any  $\frac{1}{3}$ )




(any  $\frac{1}{3}$ )

For extra practice, do Page 12.



C I R C L E  C O R R E C T  B O X	TL. PTS	
	6	130
	NO. OF PTS	:
	5	83
	4	67
	3	50
	2	33
	1	17



Each part is of the whole set

**Each part is of the whole set.**

Divide the set into four equal parts.

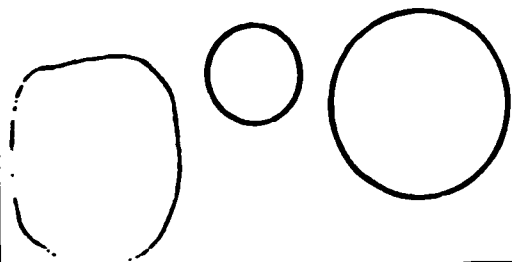
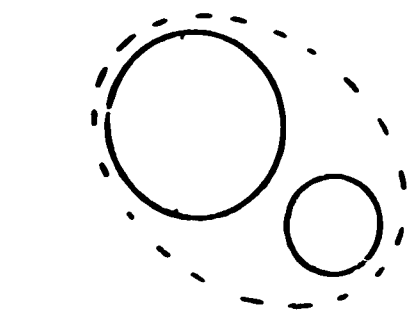
**Each part is of the whole set.**

**Each part is                      of the whole set.**

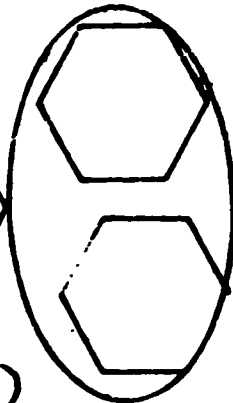
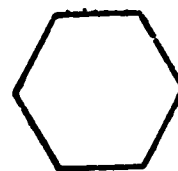
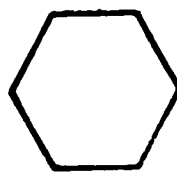
[illegible]

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	3	100%
	NO OF PTS.	.
	2	67
	1	33

Circle  $\frac{1}{2}$  of the objects in each set below.

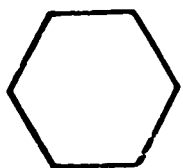
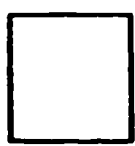
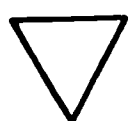
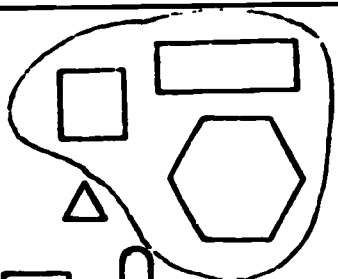
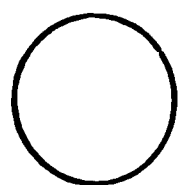


(any  $\frac{1}{2}$ )

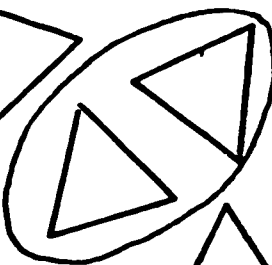


(any  $\frac{1}{2}$ )

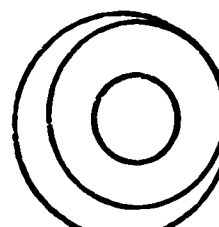
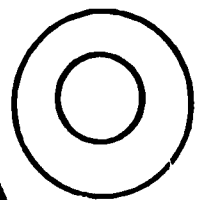
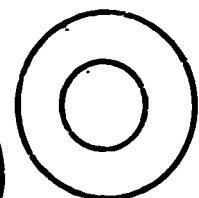
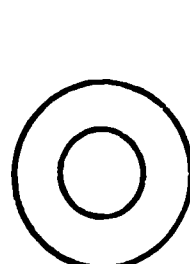
Circle  $\frac{1}{4}$  of the objects in each set below.



(any  $\frac{1}{4}$ )

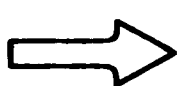


(any  $\frac{1}{4}$ )

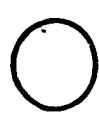
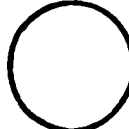
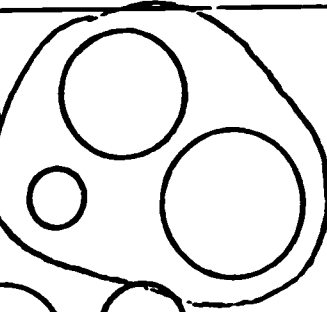
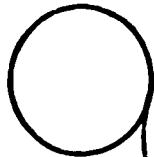


(any  $\frac{1}{4}$ )

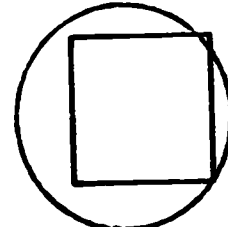
Circle  $\frac{1}{3}$  of the objects in each set below.



(any  $\frac{1}{3}$ )

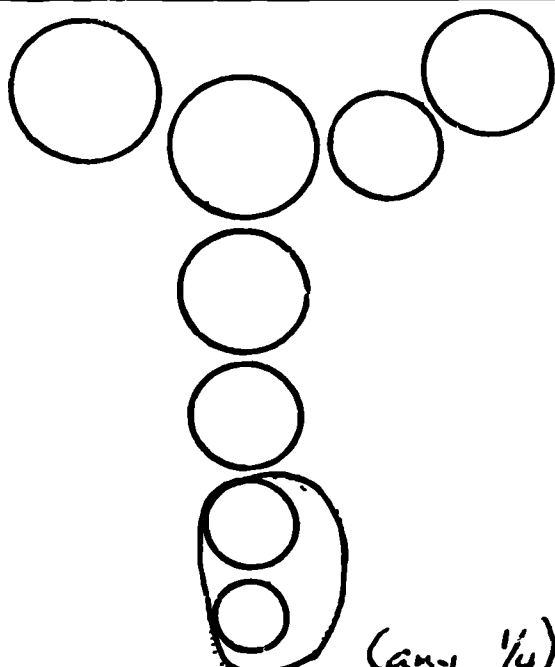
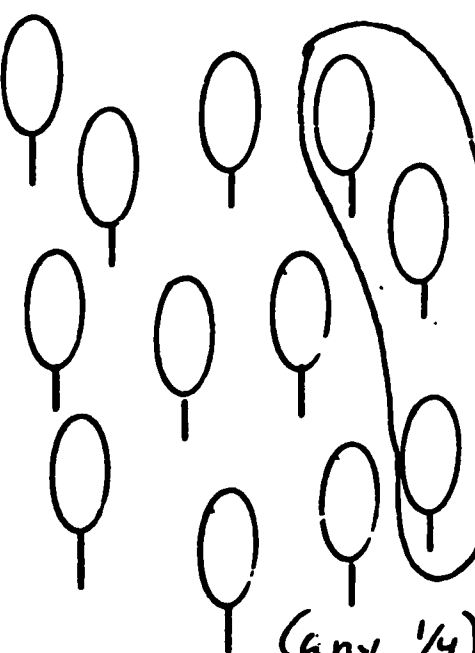
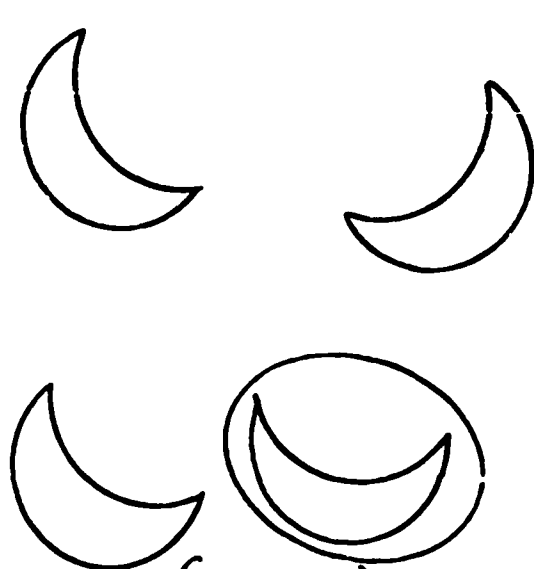


(any  $\frac{1}{3}$ )

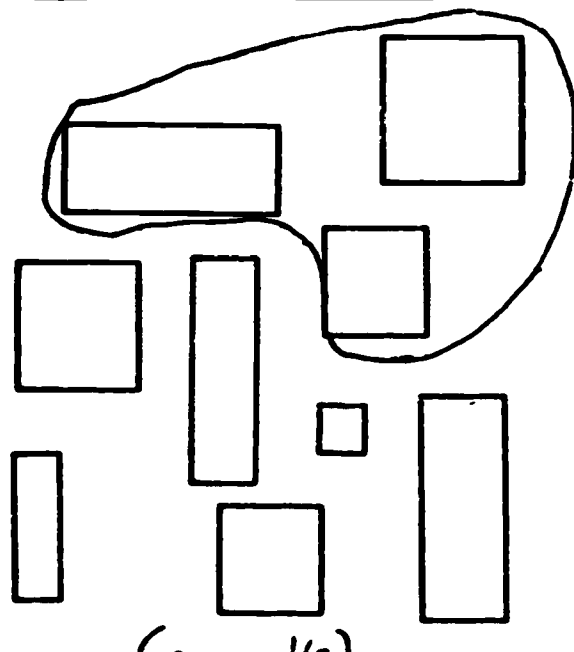
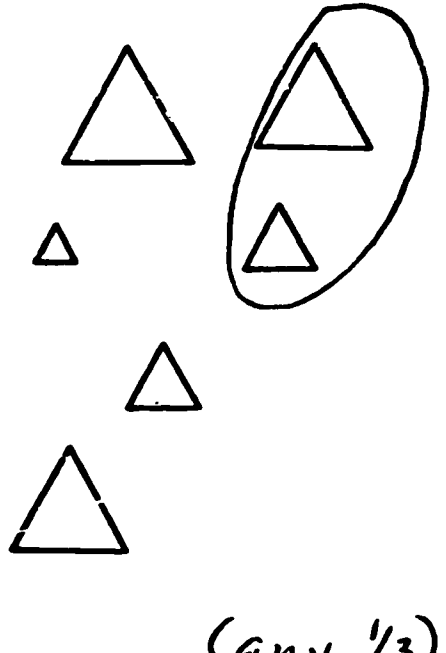
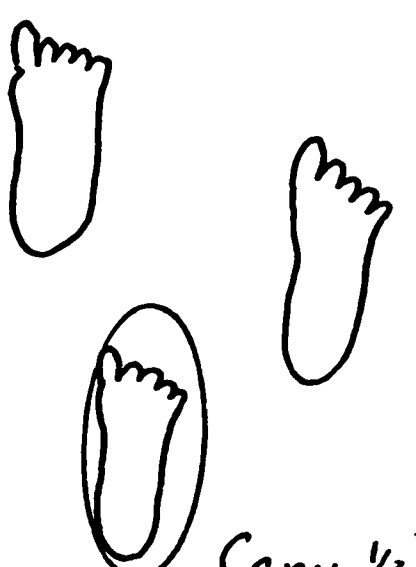


(any  $\frac{1}{3}$ )

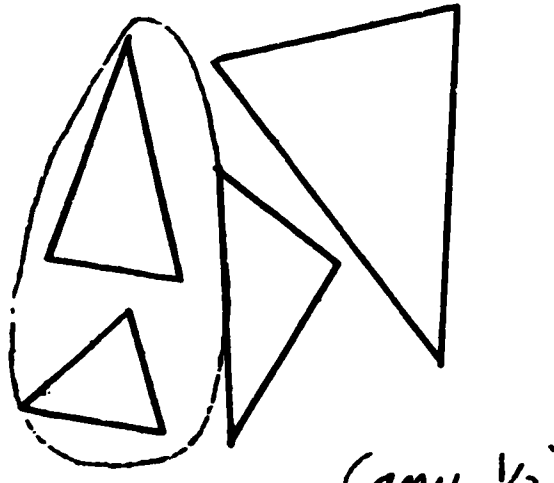
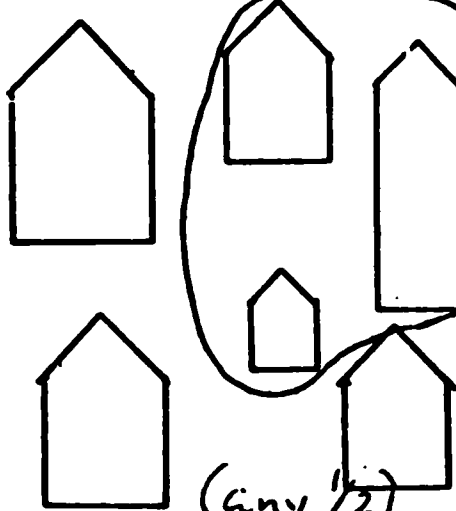

Circle one-fourth of the objects in each set below.

 <p>(any <math>\frac{1}{4}</math>)</p>	 <p>(any <math>\frac{1}{4}</math>)</p>	 <p>(any <math>\frac{1}{4}</math>)</p>
---	--	---

Circle one-third of the objects in each set below.

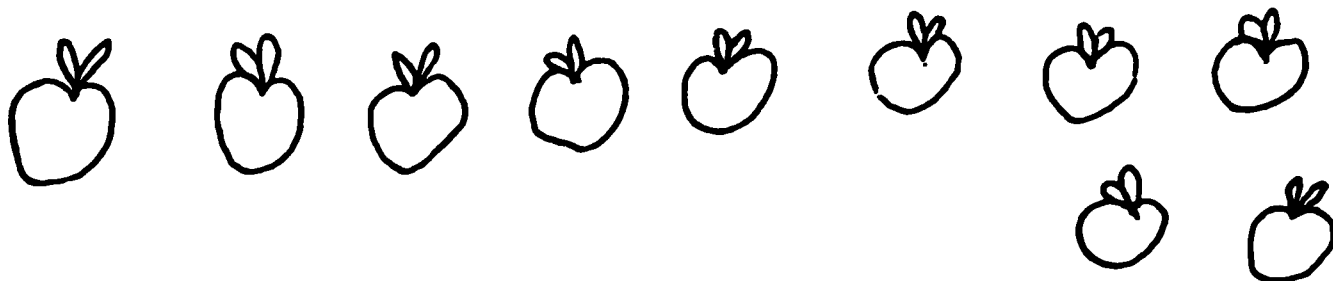
 <p>(any <math>\frac{1}{3}</math>)</p>	 <p>(any <math>\frac{1}{3}</math>)</p>	 <p>(any <math>\frac{1}{3}</math>)</p>
---	--	---

Circle one-half of the objects in each set below.

 <p>(any <math>\frac{1}{2}</math>)</p>	 <p>(any <math>\frac{1}{2}</math>)</p>	 <p>(any <math>\frac{1}{2}</math>)</p>
---	--	---

CET II

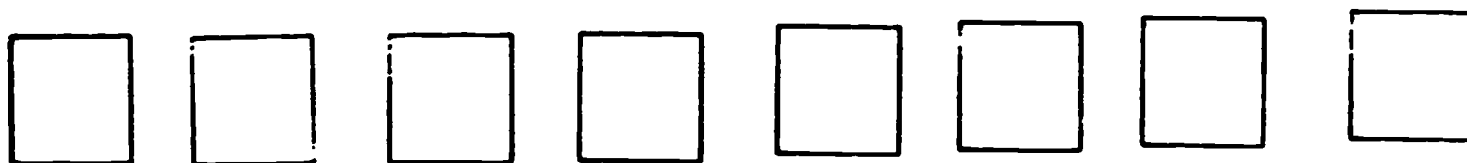
Divide the set into two equal parts.



Each part is \_\_\_\_\_ of the whole set.

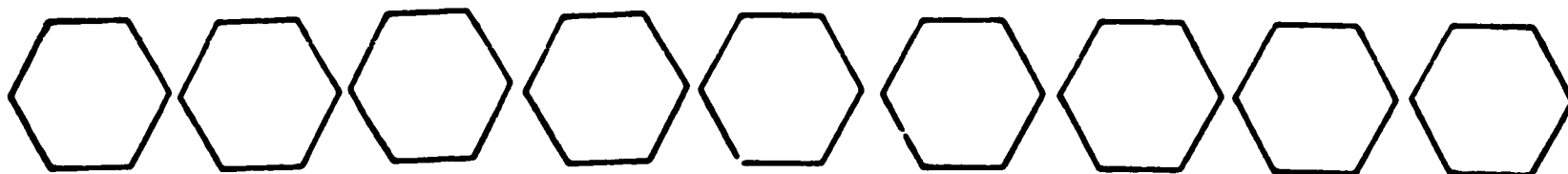
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	6	100%
	NO. OF PTS.	
	5	83
	4	67
	3	50
	2	33
	1	17

Divide the set into four equal parts.



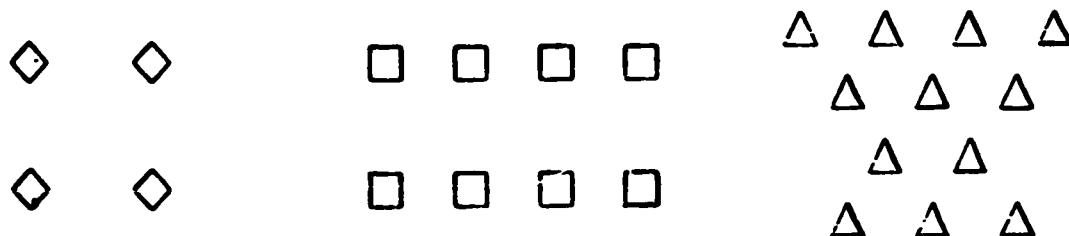
Each part is \_\_\_\_\_ of the whole set.

Divide the set into three equal parts.



Each part is \_\_\_\_\_ of the whole set.

Draw a circle around  $\frac{1}{4}$  of each set of objects.



C I R C L E  C O R R E C T  B O X	TL. PTS.	
	3	100%
	NO. OF PTS.	
	2	67
	1	33

LEVEL C, FRACTIONS, SKILL 4

**OBJECTIVE:** Divides a set of objects into two, three, or four equal parts and says that one part is now one-half, one-third, or one-fourth of the whole set.

STANDARD TEACHING SEQUENCE

Page	Supplementary Material
1. Circles $\frac{1}{2}$ of a set and writes fraction circled.	
2. Divides a set into 3 parts and marks $\frac{1}{3}$ with an X.	
3. Divides a set into 4 parts and marks $\frac{1}{4}$ with an X.	
4. Circles $\frac{1}{4}$ of a set and writes fraction circled.	
5. Circles $\frac{1}{3}$ of a set and writes fraction circled.	
6. Circles $\frac{1}{3}$ , $\frac{1}{2}$ , or $\frac{1}{4}$ of a set.	
7. Circles fraction which describes circled portion of a set.	
8. Circles $\frac{1}{2}$ , $\frac{1}{3}$ , or $\frac{1}{4}$ of a set.	11
9. Circles $\frac{1}{2}$ , $\frac{1}{3}$ , or $\frac{1}{4}$ of a set.	12
10. CET I.	
CET II.	13

Circle pages that are to be done.

Standard Teaching Sequence, Con't

1967 - 68

Sequence No. Prescription No.

14R	Divides sets into halves by drawing circles. Identifies one part as one half $\left(\frac{1}{2}\right)$
15R	Divides sets into thirds. Identifies one part as one third $\left(\frac{1}{3}\right)$ .
16R	Divides sets into fourths. Identifies one part as one fourth $\left(\frac{1}{4}\right)$ .

Teaching Aids:

Instructo numbers and fractions  
Fractional parts in circular form  
Ideal Fractions Made Easy  
Milton Bradley Fractions are as Easy as Pie  
Felt fractional parts in a tin box.  
Creative Playthings Simple Fractions Kit  
Milton Bradley Fractional Parts on Board  
Blocks

These are the four skill sheets completed by Joe and corrected by the Aide.

You study the scores and look at Joe's work on the skill sheets:

Joe can: Divide sets into  $1/4$ ,  $1/3$ ,  $1/2$  and write the fractions.

Joe cannot: - - -

Based on your analysis of Joe's work, you decide to:

       Extend prescription for the same skill.

       Assign a second CET for the same skill.

  X   Assign entire CET for Skill   4  .

Why? Joe's performance on these sheets indicates mastery of Skill 4.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 4, in particular) and on these skill sheets, you decide to prescribe the following on 2/16:

Page

Reason

10

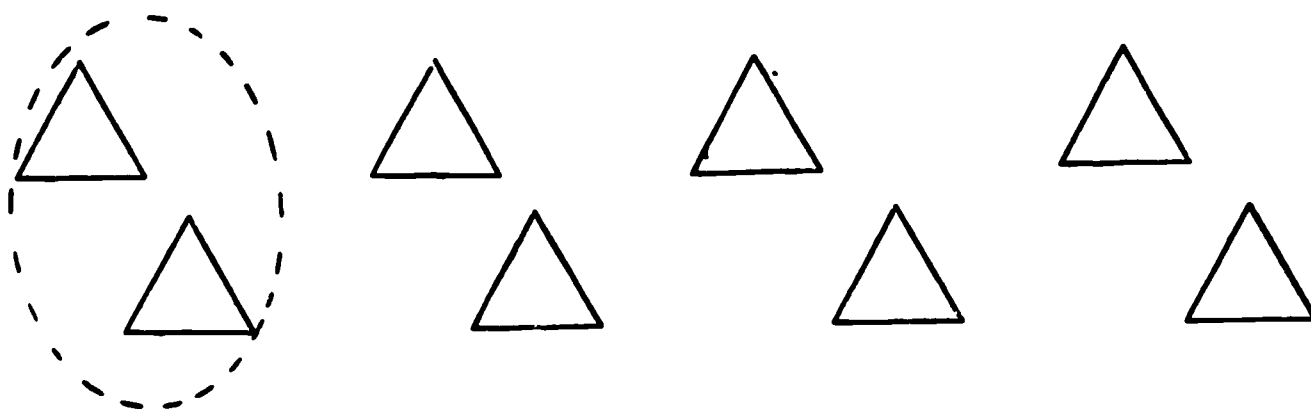
CET to test mastery of Skill 4

You estimate the time needed as: 20 minutes maximum

After you recheck this CET, you record the page number and the date on line 13 of Joe's Prescription Sheet.

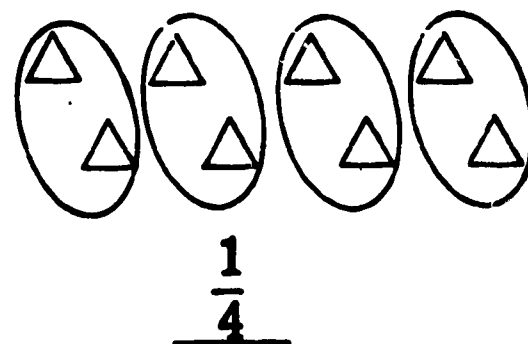
## TO THE STUDENT

Draw circles to divide this set into four parts equal in number.



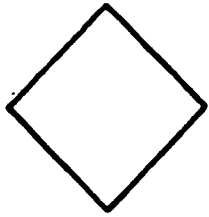
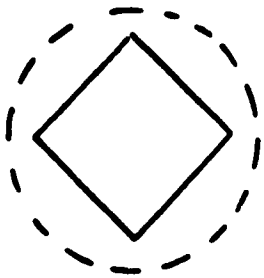
Each circle contains \_\_\_\_ of this set.

### Answers

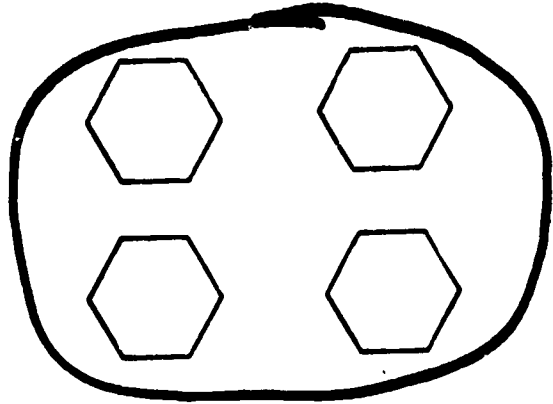
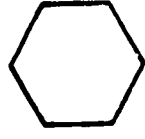
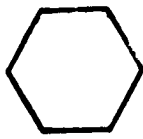
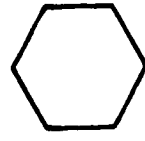
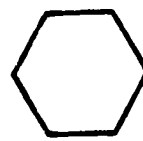




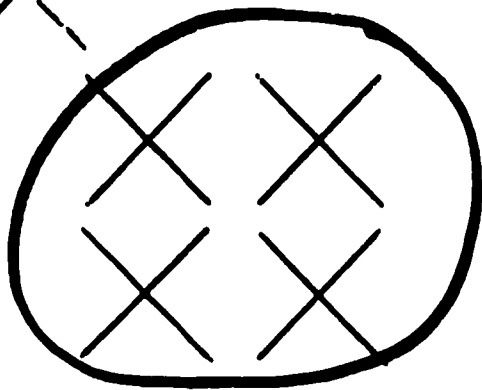
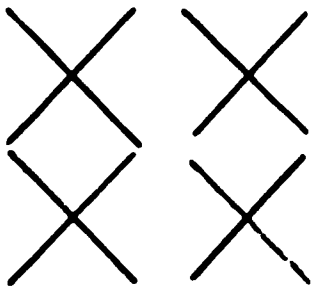
Circle one-half of each set. Write the fraction of the set you have circled in the blank.



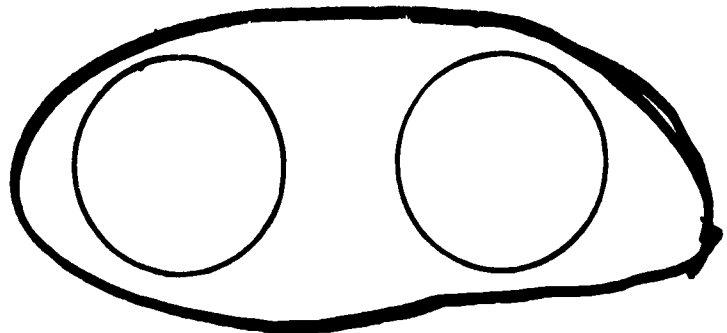
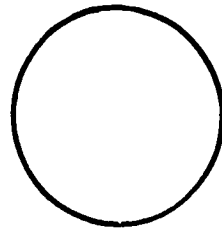
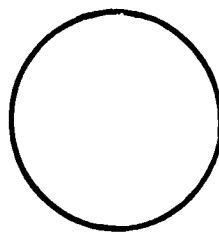
$\frac{1}{2}$



$\frac{1}{2}$



$\frac{1}{2}$

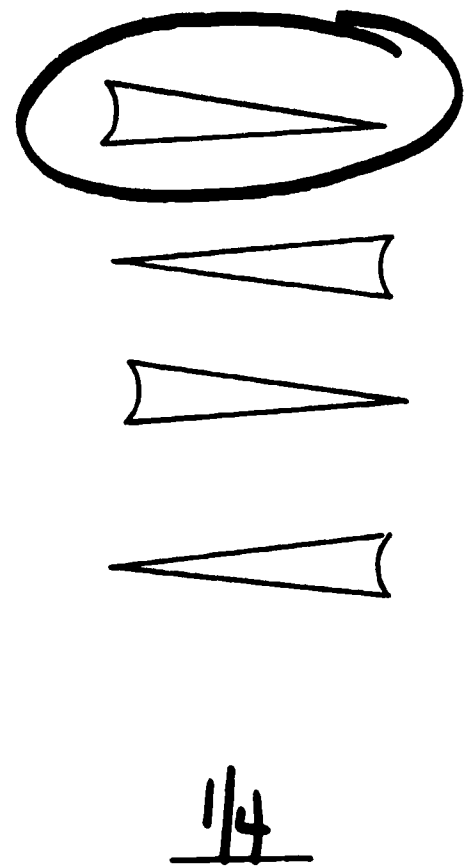
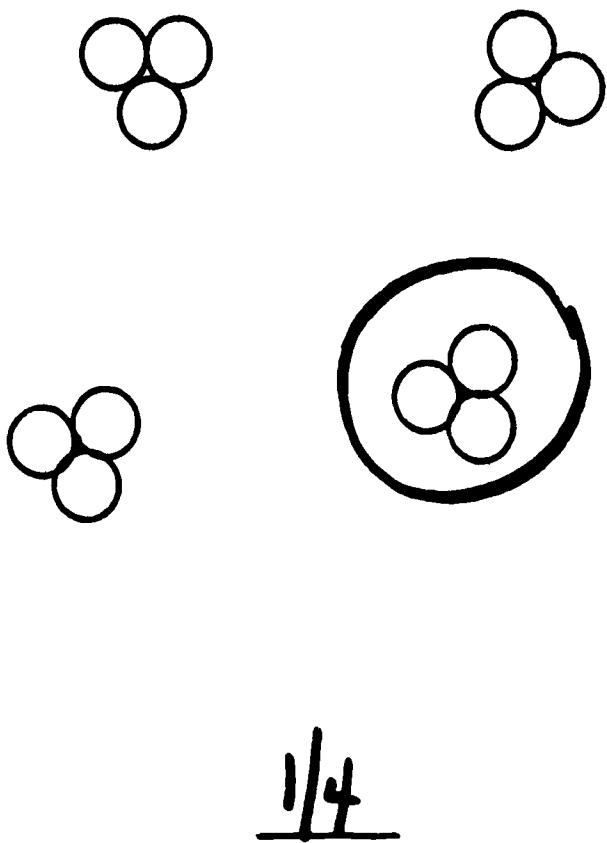
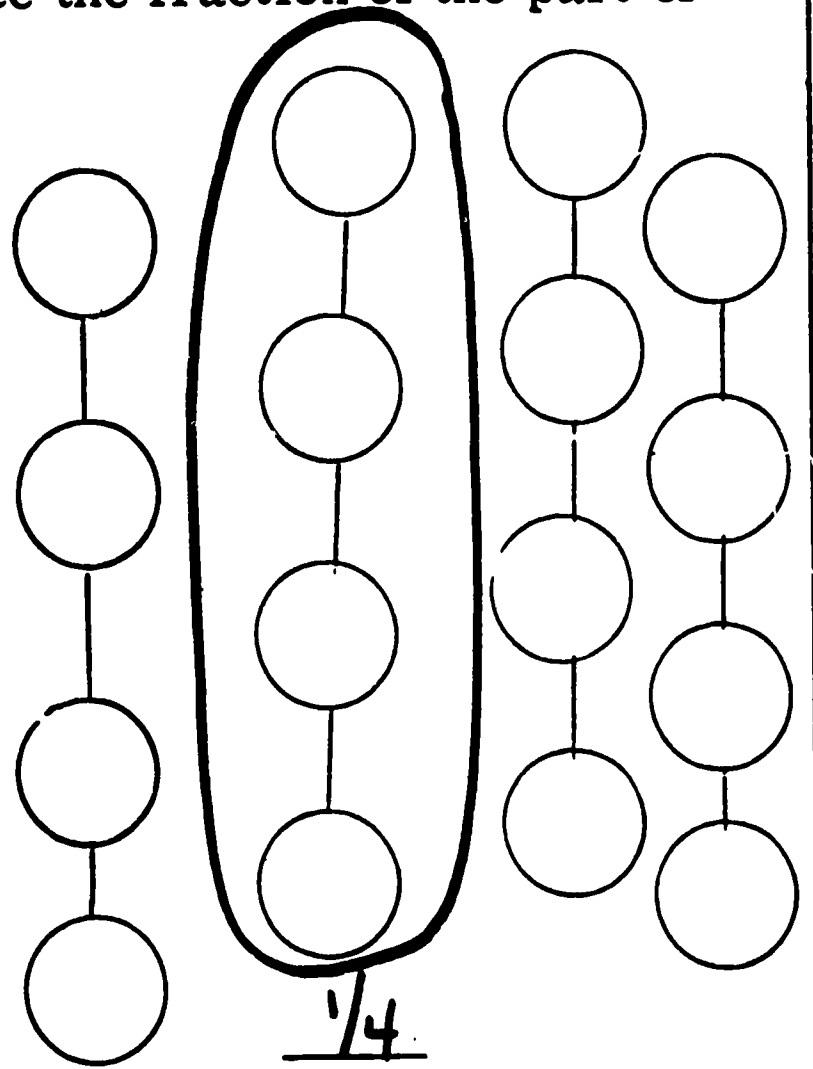
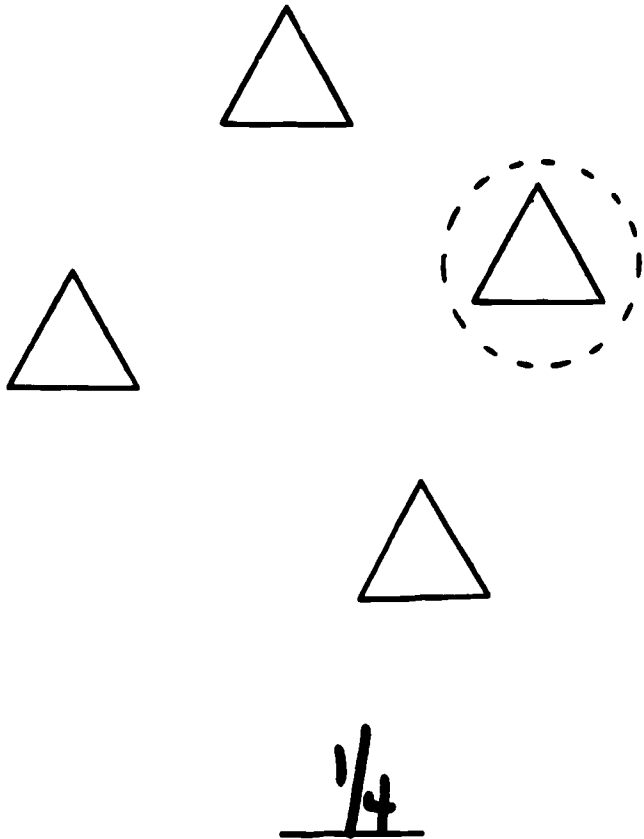


$\frac{1}{2}$

$\frac{1}{2}$  of this set has 4 things.

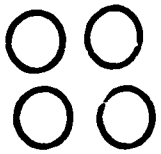
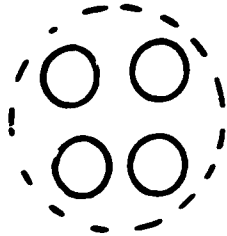
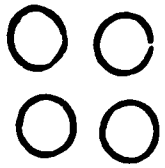
$\frac{1}{2}$  of this set has 2 things.

Circle one-fourth of each set. Write the fraction of the part of the set you circled in the blank.

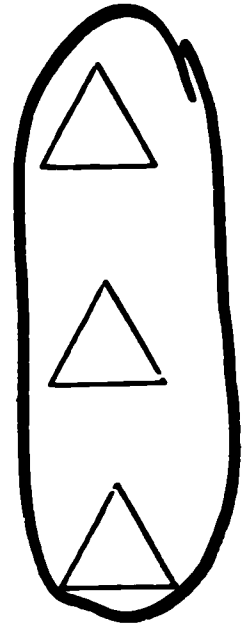


Circle one-third of each set.

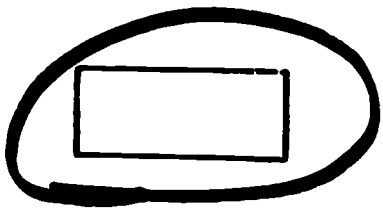
Write the fraction of the part of the set you have circled in the blank.



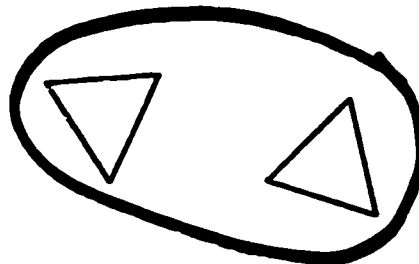
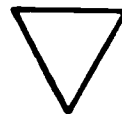
$\frac{1}{3}$



$\frac{1}{3}$



$\frac{1}{3}$



$\frac{1}{3}$

This is the CET completed by Joe and corrected by the Aide.

You record (in the role of Aide) the scores on the Prescription Sheet.

You look at Joe's work on the CET:

Joe can: PART I - Divide a set into 2, 3, or 4 equal parts and name each part as 1/2, 1/3, 1/4. PART II - Identify 1/2, 1/3, and 1/4 of a set.

Joe cannot: - - -

You describe how Joe worked with this prescription: Joe worked quickly and confidently on this CET. He was eager to demonstrate mastery of this skill.

Based on your analysis of Joe's work, you decide to:

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☒ Assign entire CET for Skill 5.
- ☐ Assign Part II of CET for Skill     .
- ☐ Write initial prescription for Skill     .

Why? Pretest score (Skill 5) was 0% and Part 2 of CET for Skill 4 was 100%; Joe may have gained an understanding of this skill due to his prior learning.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (Skill 5, in particular) and on these skill sheets, you decide to prescribe the following on 2/16:

Page

Reason

12 P\*

CET to test mastery of Skill 5

\*P=CET pad

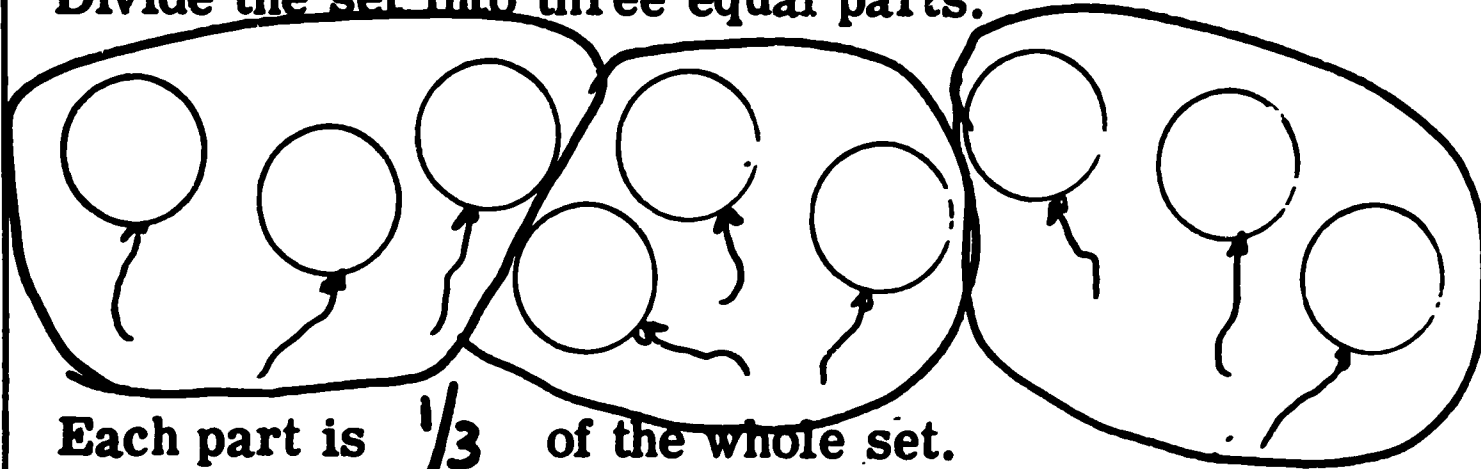
You estimate time needed as: 20 minutes maximum

After you recheck this CET, you record the page number and the date on line 14 of Joe's Prescription Sheet.

CET I

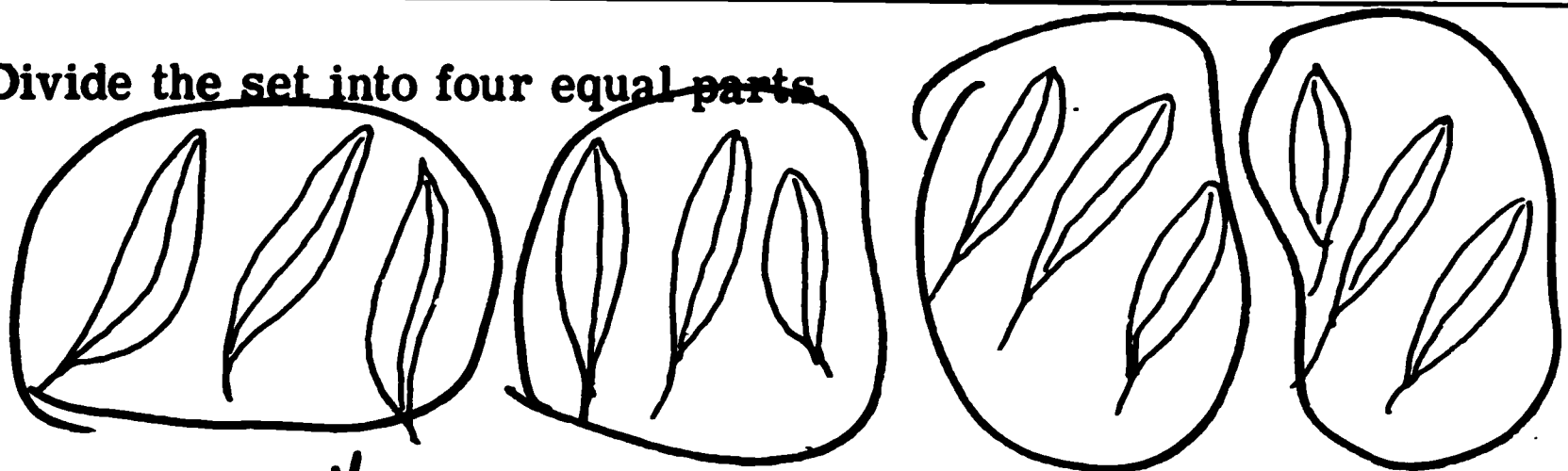
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	6	100%
	NO. OF PTS.	
	5	83
	4	67
	3	50
	2	33
	1	17

Divide the set into three equal parts.



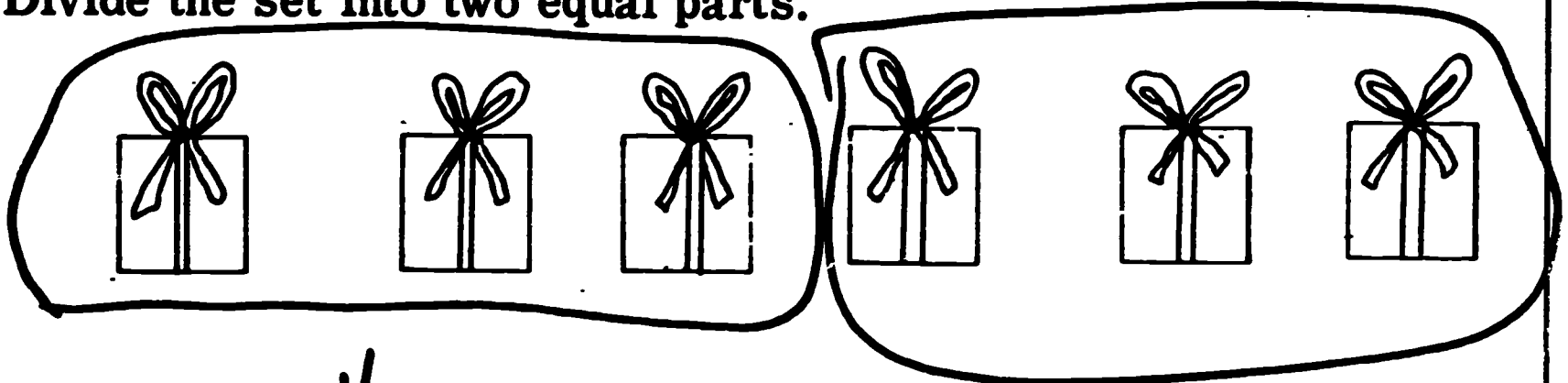
Each part is  $\frac{1}{3}$  of the whole set.

Divide the set into four equal parts.



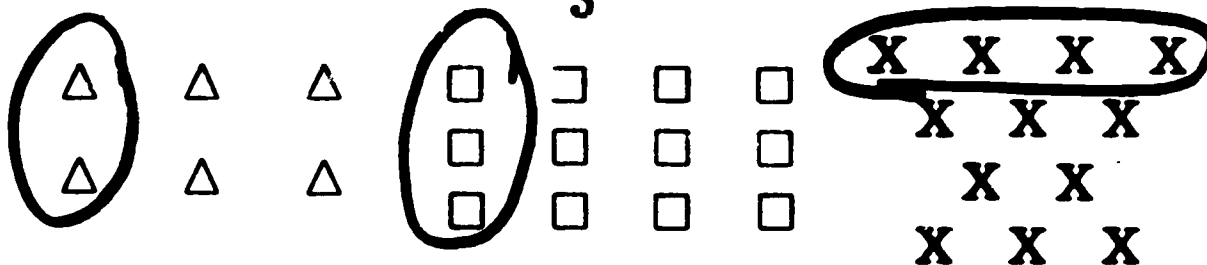
Each part is  $\frac{1}{4}$  of the whole set.

Divide the set into two equal parts.



Each part is  $\frac{1}{2}$  of the whole set.

Draw a circle around  $\frac{1}{3}$  of each set of objects.



C I R C L E  C O R R E C T  B O X	TL. PTS.	
	3	100%
	NO. OF PTS.	
	2	67
	1	33

This is the CET completed by Joe and corrected by the Aide.

You record (in the role of Aide) the scores on the Prescription Sheet.

You look at Joe's work on the CET:

Joe can: PART I - Divide sets of objects and indicate one-fourth, one-third, one-half of each set. PART II - Note: There is no Part 2 because this is the last skill in the unit.

Joe cannot: \_\_\_\_\_

You describe how Joe worked with this prescription: Joe was very confident of his ability to master this skill and worked quickly.

Based on your analysis of Joe's work, you decide to:

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for Skill \_\_\_\_.
- ☐ Assign Part II of CET for Skill \_\_\_\_.
- ☐ Write initial prescription for Skill \_\_\_\_.
- ☒ Assign a posttest for unit C-Frac.
- ☐ Assign the next unit pretest.

Based on your diagnosis of Joe's behavior, his performance on the Pretest (all skills) and on these skill sheets, you decide to prescribe the following on 2/16:

Prescription

Reason

Review

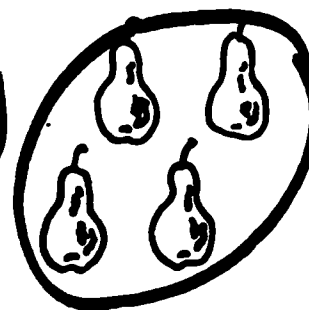
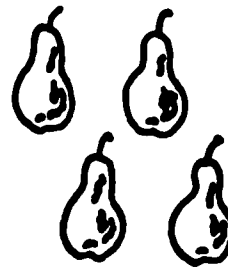
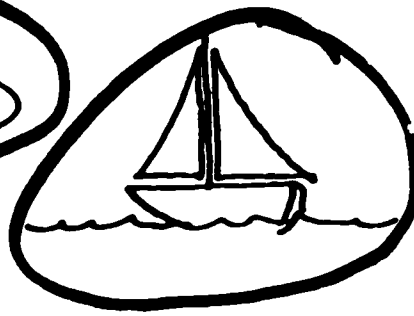
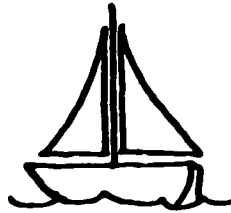
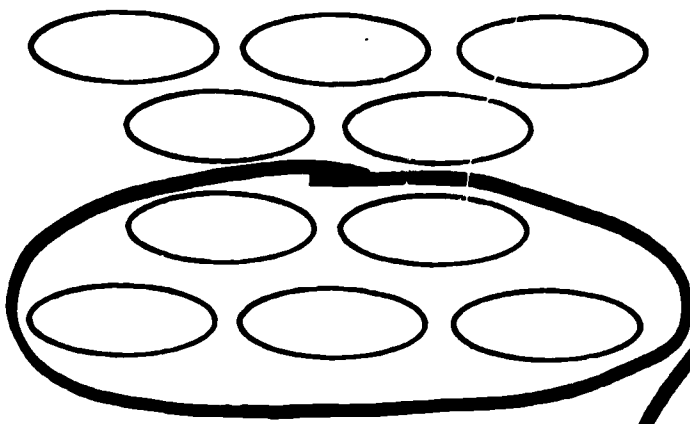
To enable Joe to be comfortable in the testing situation.

Posttest

To determine mastery of all skills in this unit.

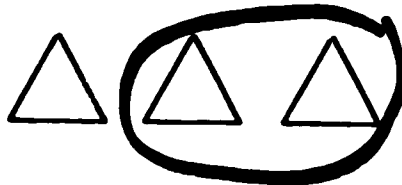
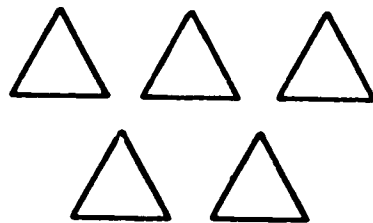
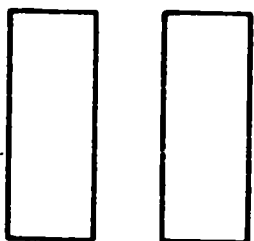
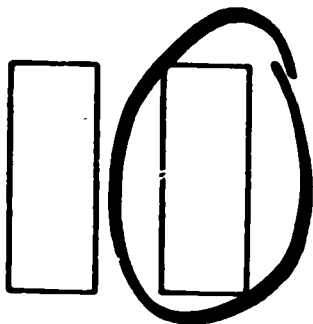
**CET I**

**Draw a circle around  $\frac{1}{2}$  of each set of objects.**

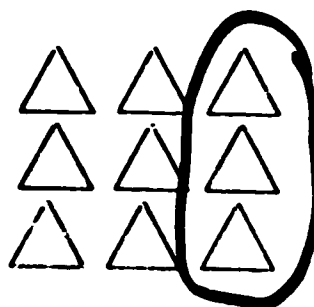
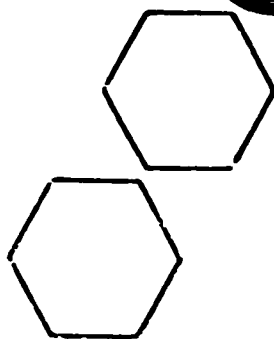
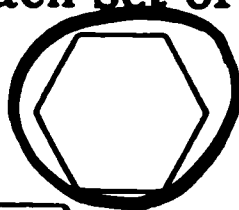
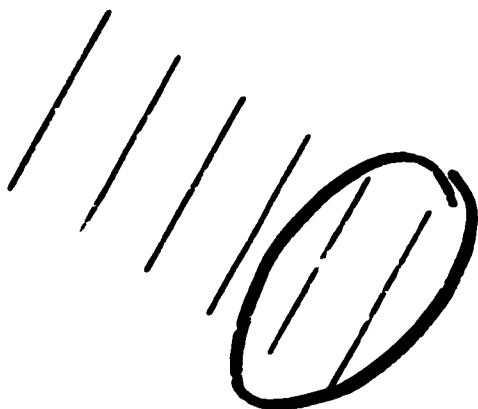


C		TL PTS	
I		3	100%
A		NO TIE	
C		PTS.	
L		2	67
E		1	33
C			
O			
R			
R			
E			
C			
T			
B			
X			

**Draw a circle around  $\frac{1}{4}$  of each set of objects.**



**Draw a circle around  $\frac{1}{3}$  of each set of objects.**



**This is the Posttest which has been completed by Joe and corrected by the Aide.**

**Turn to pages 158 and 159 for directions to the Aide.**

**Page 158 illustrates where the Aide records Posttest information on the Prescription Sheet.**

**Page 159 illustrates where the Aide records information on the Unit Test Record.**



SCHOOL CODE

NAME

Joe Bowen

NUMBER

0976

CLASS

3



*and regularly presented instruction*

**MATHEMATICS**

**Post Test**

**LEVEL C**

**FRACTIONS (08)**

Developed by The Testing and Evaluation Staff, Learning Research and Development Center, University of Pittsburgh; Richard Cox, Ph.D., Director

Appleton-Century-Crofts



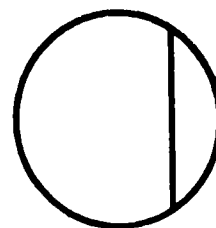
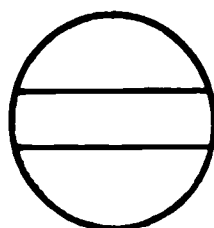
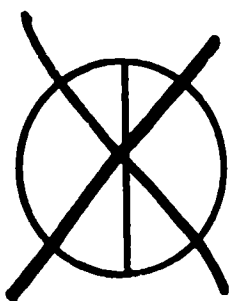
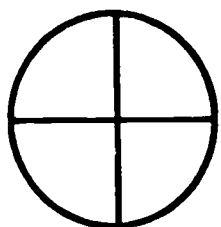
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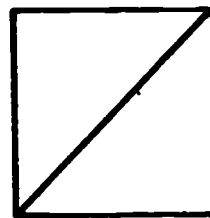
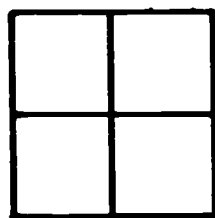
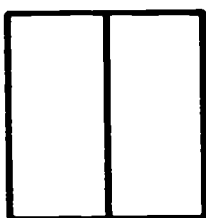
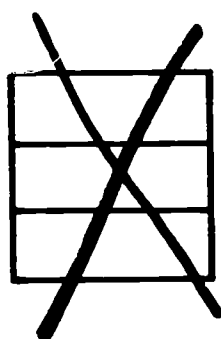
**DEVELOPMENTAL EDITION**

Directions: Put an X on the figure that is divided into  
...

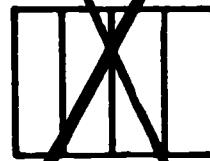
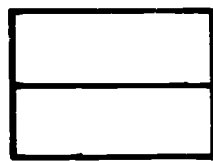
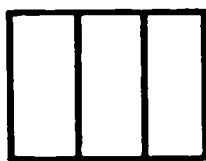
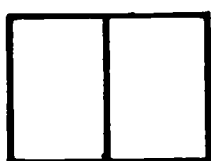
halves



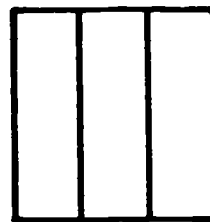
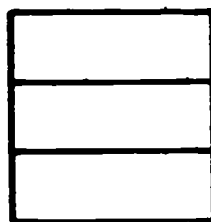
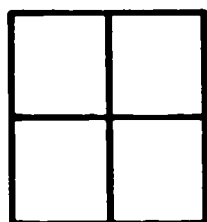
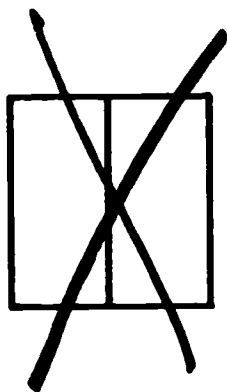
thirds



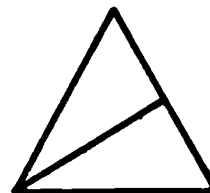
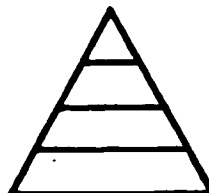
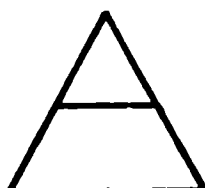
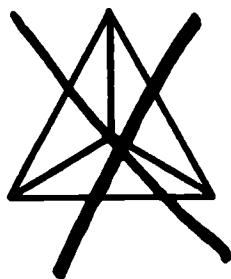
fourths



halves



thirds

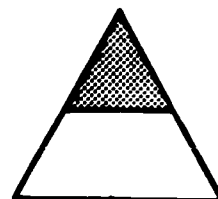
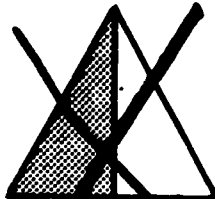
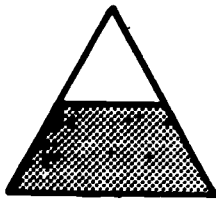


C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

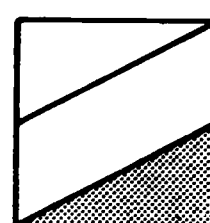
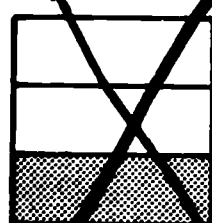
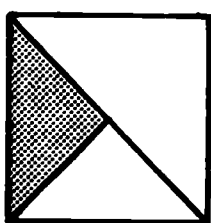
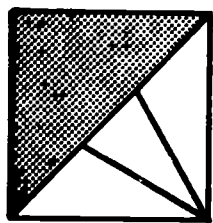
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	7	100%
	NO. OF PTS.	%
	6	86
	5	71
	4	57
	3	43
	2	29
	1	14

Directions: Put an X on the figure which is shaded to match the printed fraction.

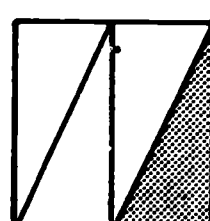
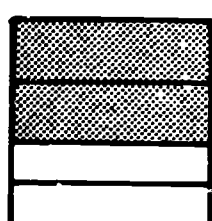
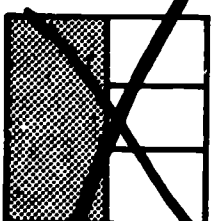
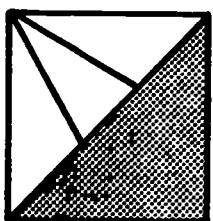
$\frac{1}{2}$



$\frac{1}{3}$



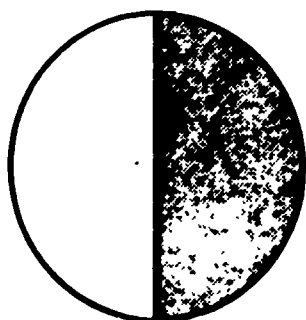
$\frac{1}{4}$



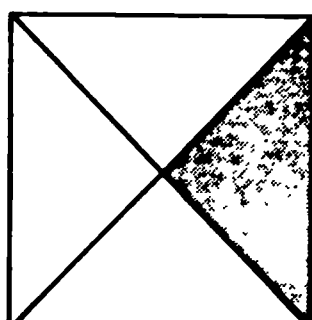
Directions: Fill in the blank.

One-fourth means one of 4 equal parts.

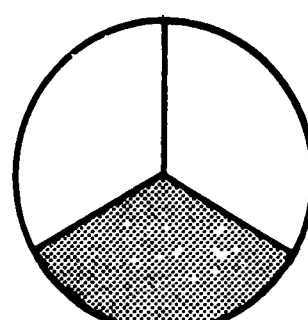
Directions: Draw a circle around the fraction that tells what part of the figure is shaded.



$\frac{1}{2}$   $\frac{1}{3}$   $\frac{1}{4}$



$\frac{1}{2}$   $\frac{1}{3}$   $\frac{1}{4}$

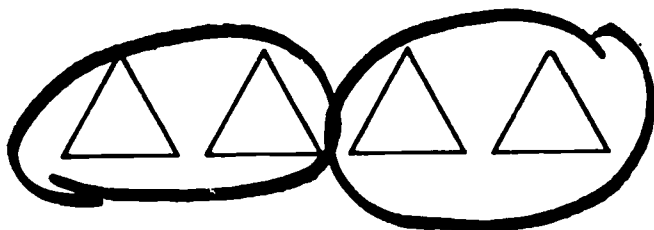


$\frac{1}{2}$   $\frac{1}{3}$   $\frac{1}{4}$

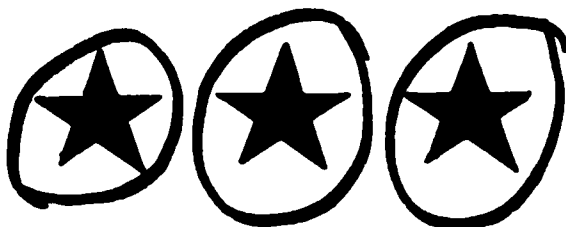
Directions: Circle the parts of each row that will divide the row into . . .

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

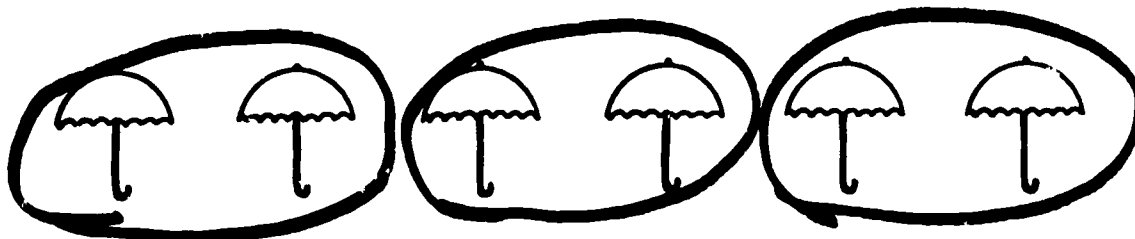
halves



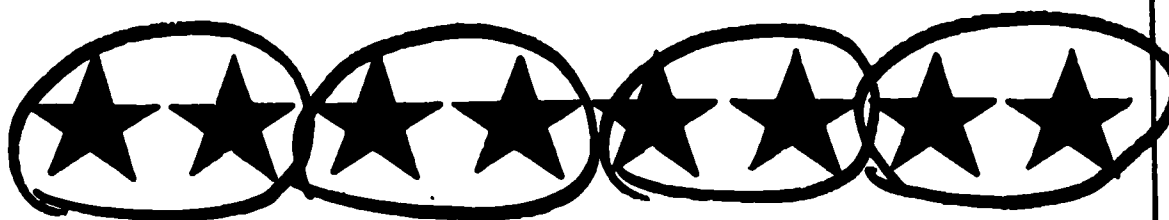
thirds



halves



fourths



thirds



C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

Directions: Divide the set of stars below into two equal parts. Circle each of the parts. Fill in the blank.



Each part is what fraction of the total set?

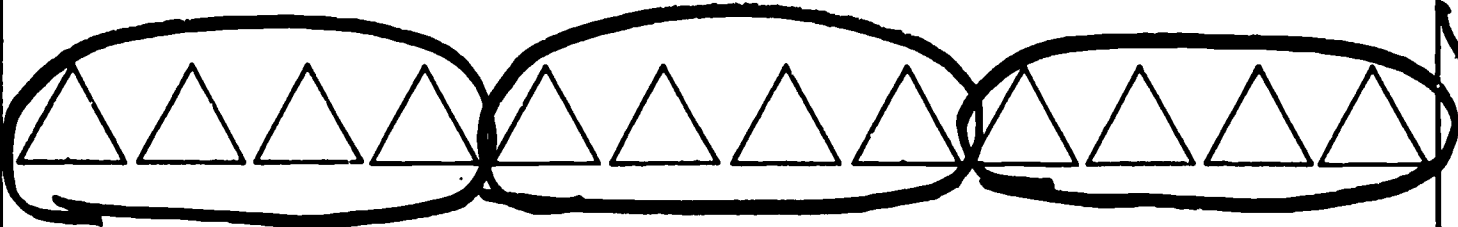
1/2

Directions: Divide the set of lollypops below into three equal parts. Circle each of the parts. Fill in the blank.

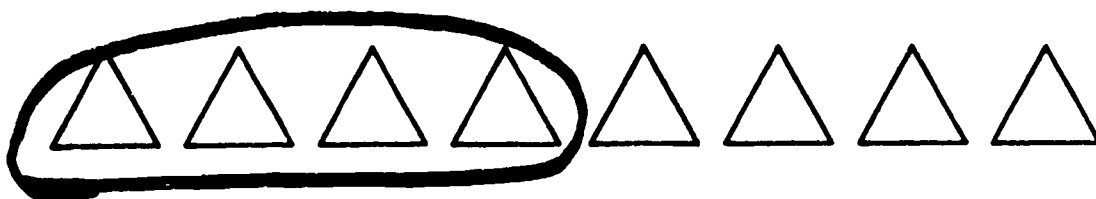
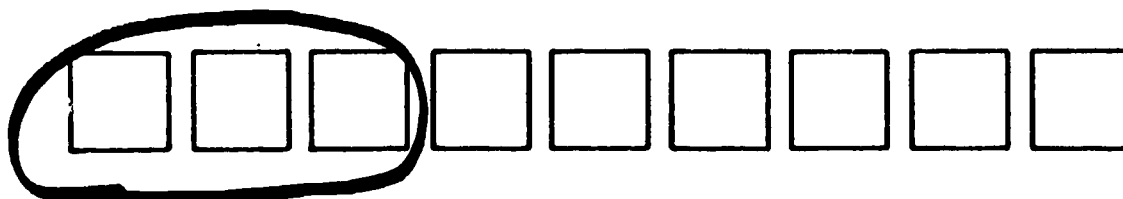
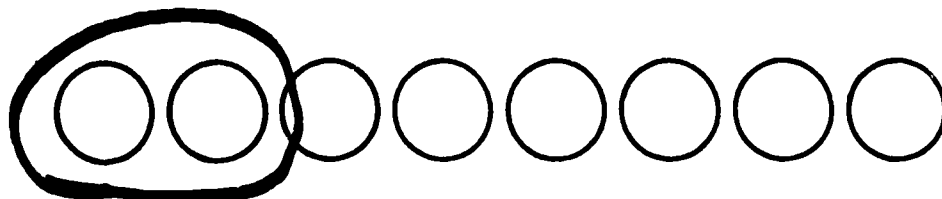
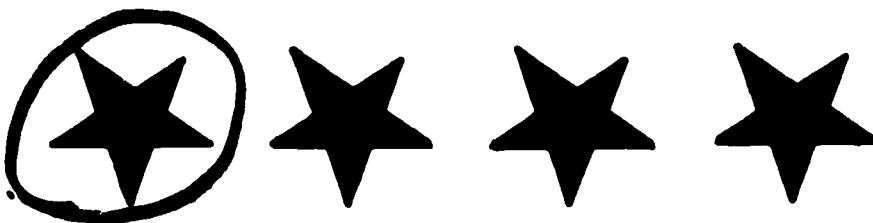


Each part is 1/3 of the total set.

Directions: Divide the set of triangles below into four equal parts.



Directions: Circle one part of each set which is equal to the fraction shown.

 $\frac{1}{2}$  $\frac{1}{3}$  $\frac{1}{4}$  $\frac{1}{4}$  $\frac{1}{3}$ 

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

# MATHEMATICS PRESCRIPTION SHEET

PAGE: 1 OF 1

SCHOOL STAMP

U. S. 2-3

STUDENT NAME **Joe Bowen**

STUDENT NUMBER **0976**

U. S. 4 5 6 7

GRADE **3**

ROOM **107**

U. S. 9

UNIT **C-Frac. 1, 2, 3, 5**

U. S. 10 11 12

UNIT DATES		
UNIT BEGAN	<b>2/1</b>	U. 13-16
UNIT ENDED		U. 17-20
DAYS WORKED*		U. 21-22

SCHOOL CALENDAR		
BEGAN		U. 23-25
ENDED		U. 26-28
Worked		

SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	SCORE	MAX. POINTS	PART 1		PART 2				
S. 13-16	S. 17-19	S. 20-21	S. 22-27	S. 58-71			SCORE	% S. 72-73	SCORE	% S. 74-75			
2/1	MB	Pretest											
2/2	MB	1	Read Student Page										
			4										
			5									1	
			6										
				12	Fraction Prio								
				02	Mark S.							2	
2/4	MB	1	16										
			17										
2/4	MB	1	11	CET			17/17	100	3/3	100		3	
2/5	MB	2	14	CET			17/17	100	1/2	50		1	
2/5	MB	3	Read Student Page										
			22R	09									
			23R										
			4									1	
			6	02									
			8	Mark S.								2	
2/10	MB	3	14	CET			5/6	83	1/2	50			

DE

pres and records posttest information the Prescription Sheet:

- Maximum points per skill
- Student's points per skill
- Percentages per skill
- Average score and percentage
- Date corrected (2/17)

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
X ①	5	4	80	5	100				
X ②	7	4	57	6	86				
X ③	5	2	40	4	80	TJ			
X ④	5	5	100	4	80	TJ			
X ⑤	7	0	0	4	80	TJ			
X									
X									
X									
X									





Individually prescribed instruction  
MATHEMATICS

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# MATHEMATICS UNIT TEST RECORD

CLASS **3**

NAME Joe Bowen  
NUMBER 0976

NUMERATION (01)		Level	1-Pre-2	Post	1	2	3	4	Level	1-Pre-2	Post	1	2	3	4	Level	1-Pre-2	Post	1	2	3	4
PLACED AT LEVEL	<b>B</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACE VALUE (02)	<b>B</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACED AT LEVEL	<b>B</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
ADDITION (03)	<b>C</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACED AT LEVEL	<b>C</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
SUBTRACTION (04)	<b>C</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACED AT LEVEL	<b>C</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
MULTIPLICATION (05)	<b>C</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACED AT LEVEL	<b>D</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
DIVISION (06)	<b>D</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACED AT LEVEL	<b>D</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
COMBINATION OF PROCESSES (07)	<b>D</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90
PLACED AT LEVEL	<b>D</b>	Max.Pts. 100	95	9/20	95	90	90	90	Level	95	90	90	90	90	90	Level	95	90	90	90	90	90

UPDATE AND PLACE IN STUDENT FOLDER.



**MATHEMATICS UNIT TEST  
RECORD**

CLASS **3**

NAME Joe Bowen  
NUMBER 0976

	Level	1-Pre-2	Post	Level	1-Pre-2	Post	Level	1-Pre-2	Post	Level	1-Pre-2	Post
FRACTIONS (56)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		
MONEY (59)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		
TIME (19)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		
SYSTEMS OF MEASUREMENT (11)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		
GEOMETRY (12)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		
SPECIAL TOPICS (13)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		
ADDITION AND SUBTRACTION (34)			1 2 3 4			1 2 3 4			1 2 3 4			1 2 3 4
PLACED AT LEVEL	Max. Pts.	Score	Date	Level			Level			Level		

The Aide will enter Pretest information on the Unit Test Record:

a. Level.....C  
b. Maximum Points....15/29  
c. Score.....51%  
d. Date Pretest corrected..2/1

UPDATE AND PLACE IN STUDENT FOLDER.

You examine the entire Posttest (starting on page 152).

You note the skills in the unit that are below mastery (under 85%).

You make a general statement about Joe's performance in each of these skills:

Joe can: Identify, divide and name fractional parts of sets using fractions  $1/4$ ,  $1/3$ ,  $1/2$  when pictures clues are presented.

Joe cannot: Identify and divide sets into  $1/4$ ,  $1/3$ ,  $1/2$  with consistent accuracy.

You describe how Joe worked with this prescription: Joe didn't indicate any difficulty while completing this test. He worked independently on the entire test.

Based on your analysis of Joe's behavior, his performance in the unit materials and his growth as evidenced in his work in this unit, you decide to accept Joe's 85% Pretest result as unit mastery.

The Prescription Sheet on page 152 illustrates

SHEET

4master4MB

STUDENT  
NAME Joe Bowen

STUDENT NUMBER	0	9	7	6
U. S.	4	5	6	7

GRADE	3	ROOM	107
U. S.	9		

UNIT	C-Frac. 1, 2, 3, 5			
	U. S.	10	11	12

UNIT DATES			
UNIT BEGAN	2/1	U. 13-16	
UNIT ENDED	2/17	U. 17-20	
DAYS WORKED*			U. 21-22

You write "Mastery" and your initials  
at the top of Prescription Sheet #1.

SKILL BOOKLETS						
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	SCORE	MAX. POINTS
S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////
1	2/1	MB	Pretest			
2	2/2	MB	1	Read Student Page		
3			4			
4			5			
5			6			
6				12	Fraction Pies	
7				02	Mark S.	
8	2/4	MB	1	16		
9				17		
10	2/4	MB	1	11	CET	
11	2/5	MB	2	14	CET	
12	2/5	MB	3	Read Student Page		
13			22R	09		
14			23R			
15			4			
16			6	02		
17			8	Mark S.		
18	2/10	MB	3	14	CET	

[illegible]

**You indicate mastery of Skills 3, 4, 5 by writing "TJ" next to those skills in the Posttest Scores box.**

<b>CODES</b>	<b>INSTRUCTIONAL TECHNIQUE</b>
<b>01</b>	<b>TEACHER TUTOR</b>
<b>02</b>	<b>PEER TUTOR</b>
<b>03</b>	<b>SMALL GROUP (2-10)</b>
<b>04</b>	<b>LARGE GROUP (11-UP)</b>
<b>05</b>	<b>SEMINAR</b>
<b>06</b>	<b>CURR. TEXTS</b>
<b>07</b>	<b>OTHER TEXTS</b>
<b>08</b>	<b>FILM STRIPS</b>
<b>09</b>	<b>RECORDS, TAPES</b>
<b>10</b>	<b>RESEARCH</b>
<b>11</b>	<b>TUTOR OF OTHERS</b>
<b>12</b>	<b>OTHERS</b>

OVERFLOW  
U. & S. 79

UNIT CARD: "U" IN COLUMN 80

[illegible]

SCHOOL STAMP

U. S. 2-3

STUDENT NAME

Joe Bowen

STUDENT NUMBER

097

U. S. 4 5 6 7

GRADE

3

ROOM

107

U. S. 9

UNIT

C-Frac.

U. S. 10 11 12

UNIT DATES

UNIT BEGAN

U. 13-16

UNIT ENDED

U. 17-20

DAYS WORKED\*

U. 21-22

SCHOOL CALENDAR

BEGAN

U. 23-25

ENDED

U. 26-28

Worked

SKILL BOOKLETS								CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX. POINTS	PART 1		PART 2					
PRES.	INIT.	NO.	NO.	TECH CODES			SCORE	%	SCORE	%				
S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////	SCORE	S. 72-73	SCORE	S. 74-75	////	S. 76-77		
1	2/10	MB	3	1		3	4							
2				2		3	4					3		
3				15		7	8							
4				9		3	6							
5				11		7	7					4		
6	2/12	MB	3	Blocks	12									
7				Teacher Page	03	4	4							
8	2/12	MB	3	19	CET			6/6	100	1/2	50	5		
9	2/15	MB	4	Read Student Page										
10				1										
11				4										
12				5								1		
13	2/16	MB	4	10	CET							2		
14	2/16	MB	5	12P	CET							1		
15	2/16	MB		Review										
16				Posttest										
17														
18														

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

ENTER SKILL NUMBER

ENTER POINTS PER SKILL

PRE

%

POST

%

POST

%

POST

%

32-33

U. 34-35

80

95

TO 78

X

X

X

X

X

X

X

X

X

X

X

X

**The Prescription Sheet on page 165 illustrates how the Aide completes the necessary data at the end of a student's mastered unit.**



# MATHEMATICS PRESCRIPTION SHEET

SCHOOL STAMP

U. S. 2-3

STUDENT NAME **Joe Bowen**

STUDENT NUMBER **0976**

U. S. 4 5 6 7

GRADE **3** ROOM **107**

U. S. 9

UNIT **C-Frac. 1,2,3,5**

U. S. 10 11 12

UNIT DATES

UNIT BEGAN **2/1** U. 13-16

UNIT ENDED **2/17** U. 17-20

DAYS WORKED\* **12** U. 21-22

SCHOOL CALENDAR

BEGAN U. 23-25

ENDED U. 26-28

Worked

AIDE					CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
					PART 1		PART 2				
					SCORE	% S. 72-73	SCORE	% S. 74-75		S. 76-77	
1	Completes data information at the top of the Prescription Sheet:										
2	a. Days worked (total of "Days Worked in Skill" column)										15
3											
4	b. Number Prescription Sheets (1 of 2, 2 of 2, etc.)									1	
5											
6											
7										2	
8	2/4 MB	1	16								17
9			17								
10	2/4 MB	1	11	CET	17/17	100	3/3	100		3	19
11	2/5 MB	2	14	CET	7/7	100	1/2	50		1	21
12	2/5 MB	3		Read Student Page							
13			22R	09							25
14			23R							1	
15			4								
16			6	02							
17			8	marks						2	
18	2/10 MB	3	14	CET	5/6	83	1/2	50			27

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
X ①	5	4	80	5	100				
X ②	7	4	57	6	86				
X ③	5	2	40	4	80	TJ			
X ④	5	5	100	4	80	TJ			
X ⑤	7	0	0	4	80	TJ			
X									
X									
X									
X									
X									

The reference pages in the "notes" column of the Prescription Sheets on pages 167-? are the pages in this package where that particular prescription was developed.

You should use these page references for review or for clarification of a particular procedure in the development of Joe's prescription.





STUDENT NUMBER	0	9	7	6
U. S.	4	5	6	7

U. S. 2-3

C-Free

U. S.UNIT BEGAN

**U. 13-16**

UNIT ENDED

U. 17-20

**DAYS WORKED\***

U. 21-22

## SCHOOL CALENDAR

**BEGAN**

U. 23-25

ENDED

U. 26-28

**Worked**



CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
PART 1		PART 2				
SCORE	%	SCORE	%			
	S. 72-73		S. 74-75	////	S. 76-77	
						112
					3	
					4	
						114
6/6	100	1/2	50		5	124
					1	
					2	142
					1	147

[illegible]

## Section IV

### DEVELOPING A PRESCRIPTION

#### CASE STUDY - TYPE 2

SUSAN MARKHAM

D-MULT.

**This is Susan's Placement Profile.**

**She has worked through units B-Num., B-PV; C-Num., C-PV,**  
**C-Add., C-Sub.; D-Num., D-PV, D-Add., D-Sub.**

---

**Examine the Profile and fill in the next unit to be assigned:**

---

HOOL STAMP

P. 2-3

STUDENT NAME

Susan Markham

STUDENT NUMBER

1

2

3

4

P-4

5

6

7

MATHEMATICS

GRADE

P.

4

9

ROOM

102

KEYPUNCH SAMPLE

P. 14-15

P. 16

P. 17-18

MATH. AREA CODE

PLACED AT LEVEL

% OF PLACEMENT

01

B

85

TO P. 78

MATHEMATICS AREA	DATE OF TEST	MATH AREA CODE	PLACEMENT LEVELS B—I								PLACED AT LEVEL
	P. 10-13		B	C	D	E	F	G	H	I	
NUMERATION		01	MAX. PTS.	10	10						B
			SCORE	4	2						
			%	60	20						
PLACE VALUE		02	MAX. PTS.	10	10						B
			SCORE	5	1						
			%	50	10						
ADDITION		03	MAX. PTS.		10						C
			SCORE		6						
			%		60						
SUBTRACTION		04	MAX. PTS.		10						C
			SCORE		7						
			%		70						
MULTIPLICATION		05	MAX. PTS.	<del>X</del>	<del>X</del>	10					D
			SCORE			6					
			%			60					
DIVISION		06	MAX. PTS.	<del>X</del>	<del>X</del>	10					D
			SCORE			5					
			%			50					
COMBINATION OF PROCESSES		07	MAX. PTS.		10	10					D
			SCORE		9	6					
			%		90	60					
FRACTIONS		08	MAX. PTS.		10	10					D
			SCORE		8	4					
			%		80	40					
MONEY		09	MAX. PTS.		10	10					D
			SCORE		9	5					
			%		90	50					
TIME		10	MAX. PTS.		10	10					D
			SCORE		10	4					
			%		100	40					
SYSTEMS OF MEASUREMENT		11	MAX. PTS.		10	10					D
			SCORE		8	6					
			%		80	60					
GEOMETRY		12	MAX. PTS.		10	10					D
			SCORE		10	6					
			%		100	60					
ADDITION AND SUBTRACTION		34	MAX. PTS.	10							C
			SCORE	9							
			%	90							

The next unit to be assigned is D-Mult..

Examine Susan's work on the Placement Test in D-Mult.

Remove the packet of three blank Prescription Sheets  
that follow the Placement Test.

Use them to record all prescriptions.

# IPI Placement Test

## D Multiplication (05)

NAME AND NUMBER Susan Markham - 1234

unit page 1 of 1

DATE \_\_\_\_\_

CLASS 4

	TL.	PTS.
C	10	100%
I		
R	NO. OF	
C	PTS.	%
L	9	90
E	8	80
C	7	70
O	6	60
R	5	50
R	4	40
E	3	30
C	2	20
T	1	10
B		
O		
X		

**Skill 3 – Directions: Multiply.**

$$\begin{array}{r} 9 \\ \times 1 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 6 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 1 \\ \times 5 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 0 \\ \times 2 \\ \hline 0 \end{array}$$

9 0 5 0

**Skill 4 – Directions: Multiply.**

$$3 \times 7 = \underline{\quad} X$$

$$4 \times 5 = \underline{\quad} X$$

$$2 \times 6 = \underline{\quad} X$$

$$3 \times 4 = \underline{\quad} X$$

21 20

12 12

**Skill 8 – Directions: Read each problem. Write the answer with its label on the lines.**

Bob went bowling. In each of three tries, he knocked down 6 pins.  
How many pins did he knock down altogether?

Answer 18 pins

18 pins

How many marbles would five boys have altogether if each boy had 4 marbles?

Answer 20 marbles

20 marbles

SCHOOL STAMP

U. S. 2-3

STUDENT  
NAME

STUDENT  
NUMBER

U. S.

4

5

6

GRADE

ROOM

UNIT

U. S.

9

U. S.

10

11

12

UNIT DATES

UNIT BEGAN		U. 13-16
UNIT ENDED		U. 17-20
DAYS WORKED*		U. 21-22

SCHOOL CALENDAR

BEGAN		U. 23-25
ENDED		U. 26-28
Worked		

	SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
	DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX. POINTS	PART 1		PART 2				
	→	→	→	↓	↓			SCORE	%	SCORE	%			
	PRES.	INIT.	NO.	NO.	TECH CODES			S. 72-73	S. 74-75					
	S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////	SCORE	%	SCORE	%	////	S. 76-77	
1														
2														
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9														
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12														
13														
14														
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16														
17														
18														

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

INCH SAMPLE

PRE %

U. 32-33

U. 34-35

80

95

PRE AND POST TEST SCORES										
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%	
▼			▼		▼		▼		▼	
X										
X										
X										
X										
X										
X										
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X										
X										
X										
X										
X										
X										

174

SCHOOL STAMP	U. S. 2-3
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STUDENT NAME	
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STUDENT NUMBER	4	5	6	7
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GRADE	9	ROOM		UNIT	10	11	12
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UNIT DATES	
UNIT BEGAN	U. 13-16
UNIT ENDED	U. 17-20
DAYS WORKED* U. 21-22	

SCHOOL CALENDAR	
BEGAN	U. 23-25
ENDED	U. 26-28
Worked	

	SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
	DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX POINTS	PART 1		PART 2				
	➔	➔	➔	↓	↓			SCORE	%	SCORE	%			
	PRES.	INIT.	NO.	NO.	TECH CODES			S. 72-73	S. 74-75					
	S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////	SCORE	S. 72-73	SCORE	S. 74-75	////	S. 76-77	
1														
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13														
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17														
18														

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

NCH SAMPLE

PRE % POST. %

J. 32-33 U. 34-35

80 95

TO 78

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
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X									



SCHOOL STAMP

U. S. 2-3

STUDENT NAME

STUDENT NUMBER

U. S. 4 5 6 7

GRADE  
U. S. 9

ROOM  
/ / / / / / / / / /

UNIT  
U. S. 10 11 12

UNIT DATES

UNIT BEGAN		U. 13-16
UNIT ENDED		U. 17-20
DAYS WORKED*		U. 21-22

SCHOOL CALENDAR

BEGAN		U. 23-25
ENDED		U. 26-28
Worked		/ / / / /

	SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
	DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX. POINTS	PART 1		PART 2				
	→	→	→	↓	↓									
	PRES.	INIT.	NO.	NO.	TECH CODES									
	S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////	SCORE	% S. 72-73	SCORE	% S. 74-75	////	S. 76-77	
1														
2														
3														
4														
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17														
18														

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
▼			▼		▼		▼		▼
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									

VCH SAMPLE  
 PRE % POST. %  
 32-33 U. 34-35 TO 78  
 80 95

SCHOOL STAMP

U. S. 2-3

STUDENT NAME

STUDENT NUMBER

U. S. 4 5 6 7

GRADE U. S. 9

ROOM

UNIT U. S. 10 11 12

UNIT DATES

UNIT BEGAN U. 13-16

UNIT ENDED U. 17-20

DAYS WORKED\* U. 21-22

SCHOOL CALENDAR

BEGAN U. 23-25

ENDED U. 26-28

Worked

	SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
	DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX. POINTS	PART 1		PART 2				
	→	→	→	↓	↓			SCORE	%	SCORE	%			
	PRES.	INIT.	NO.	NO.	TECH CODES									
	S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	////	////					////	S. 76-77	
1														
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17														
18														

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

JNCH SAMPLE

PRE % POST. %

U. 32-33 U. 34-35 TO 78

80 95

PRE AND POST TEST SCORES

ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
▼			▼		▼		▼		▼
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									
X									

NUMBER				
U. S.	4	5	6	7

GRADE		ROOM
U. S.	9	

UNIT			
U. S.	10	11	12

UNIT DATES			
UNIT BEGAN		U.	13-16
UNIT ENDED		U.	17-20
	DAYS WORKED*		U. 21-22

SCHOOL CALENDAR		
BEGAN		U. 23-25
ENDED		U. 26-28
Worked		/ / / / /

[illegible]

<b>CODES</b>	<b>INSTRUCTIONAL TECHNIQUE</b>
<b>01</b>	<b>TEACHER TUTOR</b>
<b>02</b>	<b>PEER TUTOR</b>
<b>03</b>	<b>SMALL GROUP (2-10)</b>
<b>04</b>	<b>LARGE GROUP (11-UP)</b>
<b>05</b>	<b>SEMINAR</b>
<b>06</b>	<b>CURR. TEXTS</b>
<b>07</b>	<b>OTHER TEXTS</b>
<b>08</b>	<b>FILM STRIPS</b>
<b>09</b>	<b>RECORDS, TAPES</b>
<b>10</b>	<b>RESEARCH</b>
<b>11</b>	<b>TUTOR OF OTHERS</b>
<b>12</b>	<b>OTHERS</b>

[illegible]

Assign D-Mult. Pretest by writing D-Mult. in unit space at the top of the first Prescription Sheet and by writing Pretest on line 1.

Student completes D-Mult. Pretest and gives it to Aide for scoring.

This is a copy of Susan's Pretest that has been scored by the Aide. Turn to pages 189 and 190 for directions to the Aide. Page 189 will tell you (in Aide's role) where to record information on the first page of the Prescription Sheets; page 190 will tell you where to record information on the Unit Test Record.

SCHOOL CODE

NAME

Susan Markham

NUMBER 1234

CLASS 4



*individually prescribed instruction*

**MATHEMATICS**

**Pre-Test**

**LEVEL D**

**MULTIPLICATION (05)**

Developed by The Testing and Evaluation Staff, Learning Research and Development Center, University of Pittsburgh; Richard Cox, Ph.D., Director

Appleton-Century-Crofts



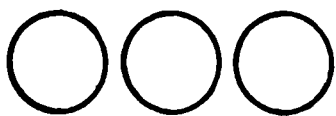
Division of Meredith Publishing Company

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**DEVELOPMENTAL EDITION**

Directions: Complete each equation.

TL. PTS.	
5	100%
NO. OF PTS.	
4	80
3	60
2	40
1	20



$$3 \times 3 = \underline{9}$$



$$2 \times 4 = \underline{\cancel{4}}$$



$$4 \times 2 = \underline{8}$$



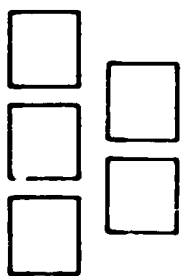
$$2 \times 5 = \underline{10}$$



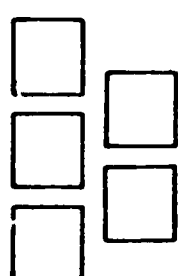
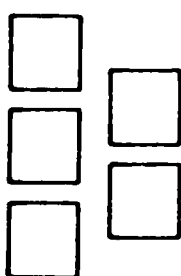
$$3 \times 4 = \underline{\cancel{6}}$$

Directions: Complete each equation.

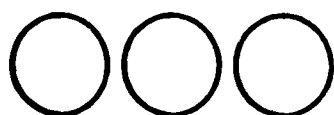
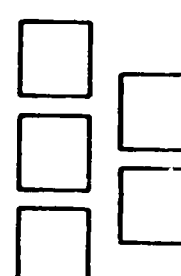
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20



$$5 + 5 + 5 + 5 = \underline{20}$$



$$4 \times 5 = \underline{\quad} \text{X}$$



$$3 + 3 + 3 = \underline{9}$$



$$3 \times 3 = \underline{\quad} \text{X}$$



$$3 + 3 = \underline{6}$$



$$2 \times 3 = \underline{\quad} \text{X}$$



$$2 + 2 = \underline{4}$$



$$2 \times 2 = \underline{\quad} \text{X}$$



$$4 + 4 + 4 + 4 = \underline{16}$$

$$4 \times 4 = \underline{\quad} \text{X}$$

Directions: Multiply.

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	8	100%
	NO. OF	%
	PTS	
	7	88
	6	75
	5	63
	4	50
	3	38
	2	25
	1	13

$$\begin{array}{r} 9 \\ \times 1 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 0 \\ \times 6 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 1 \\ \times 3 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 7 \\ \times 0 \\ \hline 0 \end{array}$$

$$6 \times 1 = \underline{6}$$

$$0 \times 8 = \underline{0}$$

$$0 \times 0 = \underline{0}$$

$$5 \times 0 = \underline{0}$$



Directions: Multiply.

$$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 10 \\ \times 2 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 1 \\ \times 4 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 2 \\ \times 3 \\ \hline \end{array} \quad \times$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array} \quad \times$$

$$3 \times 9 = \underline{\quad} \quad \times$$

$$5 \times 1 = \underline{5}$$

$$3 \times 0 = \underline{0}$$

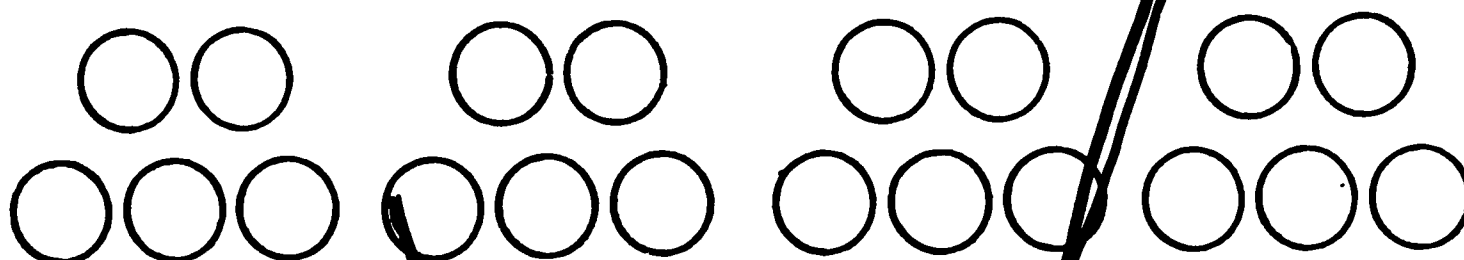
$$4 \times 10 = \underline{\quad} \quad \times$$

$$2 \times 9 = \underline{\quad} \quad \times$$

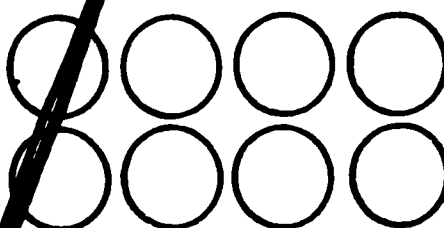
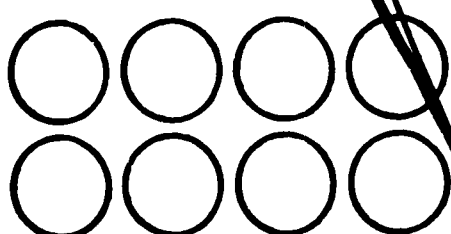
C I R C L E	TL. PTS.	
	20	100%
C O R R E C T	NO. OF PTS.	%
	19	95
B O X	18	90
	17	85
	16	80
	15	75
	14	70
	13	65
	12	60
	11	55
	10	50
	9	45
	8	40
	7	35
	6	30
	5	25
	4	20
	3	15
	2	10
	1	5

Directions: Fill in the blank to complete each equation.

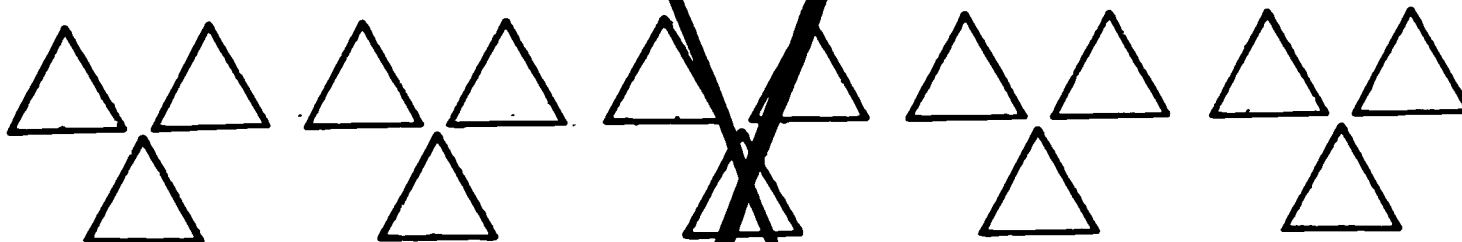
C I R C L E C O R R E C T B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	
	4	80
	3	60
	2	40
	1	20



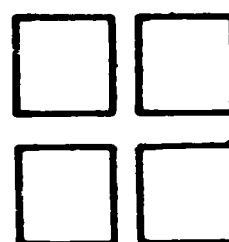
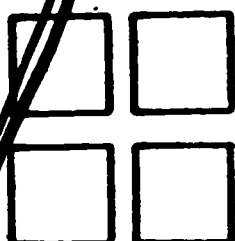
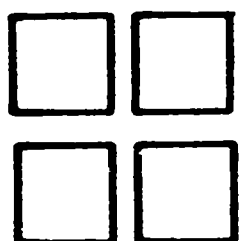
$$\underline{\hspace{1cm}} \times 5 = 20$$



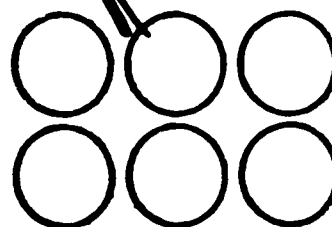
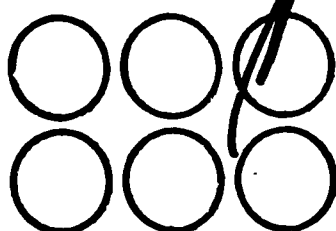
$$2 \times 8 = \underline{\hspace{1cm}}$$



$$5 \times \underline{\hspace{1cm}} = 15$$



$$\underline{\hspace{1cm}} \times 4 = 12$$



$$2 \times \underline{\hspace{1cm}} = 12$$

Directions: Multiply.

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

$4 \times 2 = \underline{\quad} X$

$3 \times 7 = \underline{\quad} X$

$2 \times 4 = \underline{\quad} X$

$7 \times 3 = \underline{\quad} X$

$1 \times 6 = \underline{6}$

$2 \times 5 = \underline{\quad} X$

$6 \times 1 = \underline{6}$

$5 \times 2 = \underline{\quad} X$

$9 \times 3 = \underline{\quad} X$

$3 \times 9 = \underline{\quad} X$

Directions: Circle the answer.

In the problem  $3 \times 2 = 6$ , what is the 6 called?

- factor
- sum
- quotient
- product

In the problem  $7 \times 4 = 28$ , what is the 7 called?

- factor
- sum
- quotient
- product

How many factors are there in the problem  $2 \times 1 = 2$ ?

- one
- two
- three
- four

In the problem  $5 \times 6 = 30$ , which number or numbers are factors?

- only 5
- both 5 and 6
- 5, 6, and 30
- only 30

In the problem  $5 \times 6 = 30$ , which number or numbers are products?

- only 5
- both 5 and 6
- 5, 6, and 30
- only 30

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20
	0	0

Directions: Solve each problem. Write your answer on the line and label it.

Tom had 3 piles of cards. There were 4 cards in each pile. How many cards were there in all?

12

Bob went bowling. In each of 3 tries he knocked down 6 pins. How many pins did he knock down altogether?

18

Three boys went fishing. Each boy caught 5 fish. How many fish did they catch altogether?

15

How many marbles would five boys have altogether if each boy had 4 marbles?

20

Mr. Gibbons had 3 bunches of bananas. There were 7 bananas in each bunch. How many bananas were there altogether?

21

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	NO. OF PTS.	%
	5	100%
	4	80
	3	60
	2	40
	1	20

STUDENT NUMBER	1	2	3	4
U. S.	4	5	6	7

UNIT	D-Mult.			
	U. S.	10	11	12

SCHOOL CALENDAR		
BEGAN		U. 23-25
ENDED		U. 26-28
Worked		/ / / / /

SKILL BOOKLETS							CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
DATE PRES.	PRES. INIT.	SKILL NO.	PAGE NO.	INST. TECH CODES	SCORE	MAX. POINTS	PART 1		PART 2				
S. 13-16	S. 17-19	S. 20-21	S. 22-57	S. 58-71	SCORE	MAX. POINTS	SCORE	% S. 72-73	SCORE	% S. 74-75			
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													

**AIDE**

Fill in the required data information on the first Prescription Sheet in your packet:

- Student's name
- Number
- Grade
- Room
- Unit
- Page number (entered for you)
- Unit began (Pretest corrected 3/3)

Score and record Pretest information on the Prescription Sheet in your packet:

- Skill numbers
- Maximum points per skill
- Student's points per skill
- Percentages per skill
- Average score and percentage
- Date corrected (3/3)

<b>CODES</b>	<b>INSTRUCTIONAL TECHNIQUE</b>
<b>01</b>	<b>TEACHER TUTOR</b>
<b>02</b>	<b>PEER TUTOR</b>
<b>03</b>	<b>SMALL GROUP (2-10)</b>
<b>04</b>	<b>LARGE GROUP (11-UP)</b>
<b>05</b>	<b>SEMINAR</b>
<b>06</b>	<b>CURR. TEXTS</b>
<b>07</b>	<b>OTHER TEXTS</b>
<b>08</b>	<b>FILM STRIPS</b>
<b>09</b>	<b>RECORDS, TAPES</b>
<b>10</b>	<b>RESEARCH</b>
<b>11</b>	<b>TUTOR OF OTHERS</b>
<b>12</b>	<b>OTHERS</b>

[illegible]

[illegible]







TEACHER

Examine Pretest starting on page 180. On your Prescription Sheet, circle the skill(s) in unit that require a prescription (under 85%). Record these skill numbers next to D-Mult. in unit space at top of sheet.

Examine the entire Pretest. Make a general statement about Susan's performance on the entire test:

Susan can: Use repeated addition; solve one-step multiplication problems using repeated addition.

Susan cannot: Multiply using factors 2-5; use multiplication terms.

Analyze Susan's behavior:

a. Describe behaviors which will facilitate learning: Susan uses manipulative aids well and works well with peer-tutor and small groups.

State how prescription will take these behaviors into account:  
Manipulative aids, peer-tutor and small groups will be prescribed.

b. Describe behaviors which will hamper learning: Susan requests help often and views tests in a personal way.

State how prescription will take these behaviors into account:  
Short assignments will be used to allow frequent evaluation and discussion of her work with teacher.

Select the first skill requiring a prescription (Skill #1).

Record the date, your initials, Skill # 1 and Read Student Page on line 1 of your Prescription Sheet. This starts your prescription.

Write what Susan must learn (page 26 of STS booklet): Group sets  
in order to complete statements with factors no larger than 5.

---

Analyze Susan's work on Pretest Skill 1.

Susan can: Group sets arranged in a single line.

---

Susan cannot: Group all sets (double line arrangement of sets).

---

Describe what Susan must learn for Skill 1.

Susan must learn: To group sets arranged in different patterns  
using factors 2-5.

---

This is a copy of the STS booklet for Skill 1 that Susan will work in.

Examine all the skill sheets and STS sheets (pp. 26 & 27) in the booklet to become familiar with materials for this skill.

Based on the previous diagnosis of Susan's behavior, her performance on the unit Pretest and, in particular, in the Skill 1 section, Susan was assigned the following on 3/3:

<u>Page</u>	<u>Reason</u>
Student Page	Introduces skills; previews work
2	Introduction to different arrangements of sets using factors 2 & 3
3	Practice on different arrangements of sets using factors 2 & 3
4	Practice on different arrangements of sets using factors 2 & 3
5	Practice on different arrangements of sets using factors 2 & 3
8	Additional practice in writing equations

Estimate of time needed: 2 class periods

Recheck these five pages.

Record these pages on your Prescription Sheet.

SCHOOL CODE

NAME \_\_\_\_\_

NUMBER \_\_\_\_\_ CLASS \_\_\_\_\_



10

Standard Teaching Sequence - Booklet

TEACHER'S EDITION

LEVEL D

MULTIPLICATION (C3)

SKILL 1

Based upon materials developed by The Mathematics Curriculum Staff,  
Learning Research and Development Center, University of Pittsburgh; Joseph  
L. Lipson, Ph.D., Director; Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome B. Kaplan, Ed.D., Teachers College, Columbia University

Appleton-Century-Crofts



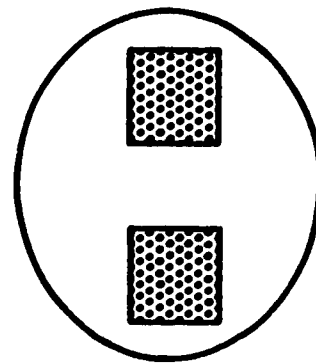
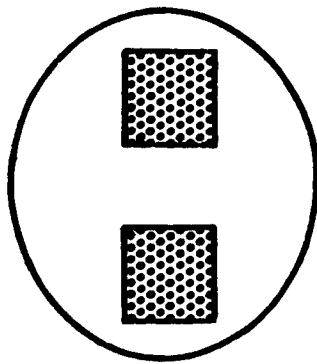
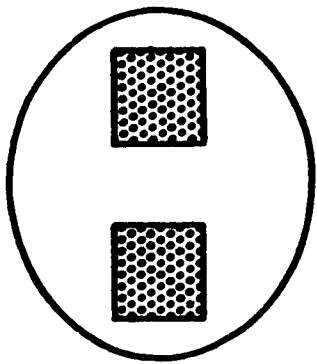
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DEVELOPMENTAL EDITION

## TO THE STUDENT

This picture shows \_\_\_\_ sets of \_\_\_\_ things.



How many things are there altogether?

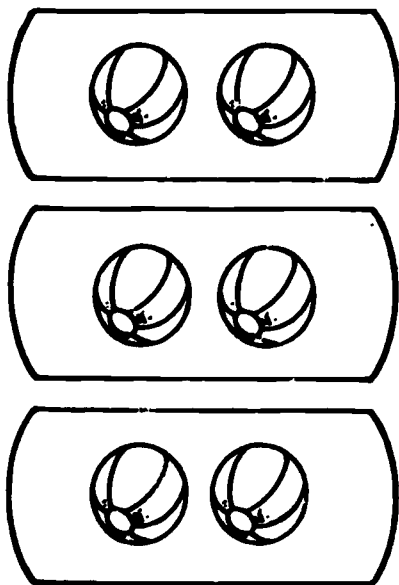
\_\_\_\_ sets of \_\_\_\_ things = \_\_\_\_ things

In this booklet you will do multiplication problems with the aid of pictured sets.

### Answers

3	2	3	2	6
---	---	---	---	---

Write the correct answers in the blanks.



How many sets are circled? 3

How many balls are in each set? 2

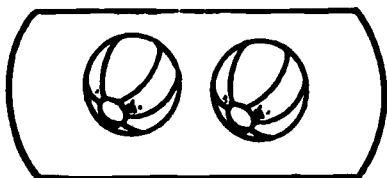
How many balls are there altogether? 6

When you have 3 sets of 2, write it  $3 \times 2$ .

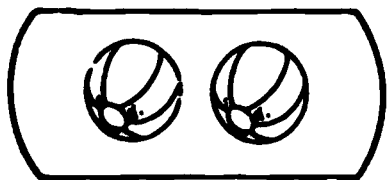
$3 \times 2$  is read 3 "times" 2.

For extra practice, do Page 17.

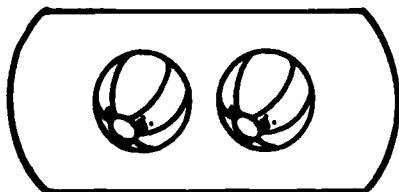
Write the correct answers in the blanks.



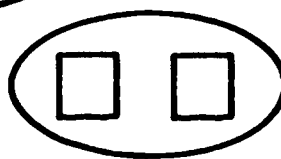
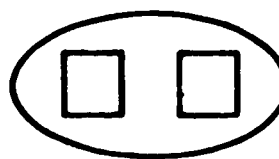
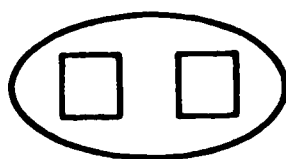
How many sets are circled? 3



How many balls in each set? 2



$3 \times 2$  means 3 sets of 2



How many sets are circled? 3

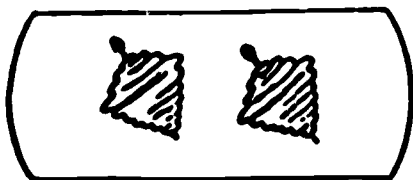
How many squares in each set? 2

3 sets of 2 can be written as

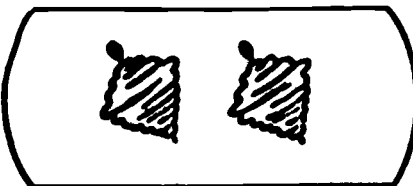
$3 \times 2$

Write the correct answers in the blanks.

How many sets are circled? 2

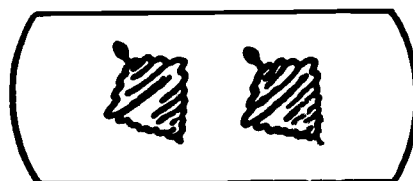


How many tops are in each set? 2

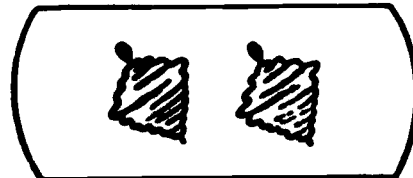


How many tops altogether? 4

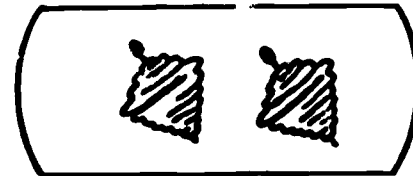
2 sets of 2 can be written as  $2 \times 2$



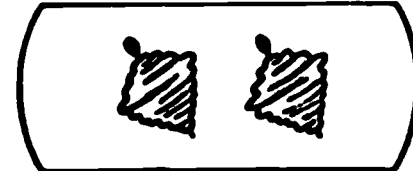
How many sets are circled? 5



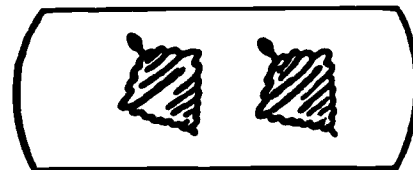
How many tops are in each set? 2



How many tops altogether? 10



5 sets of 2 can be written as  $5 \times 2$

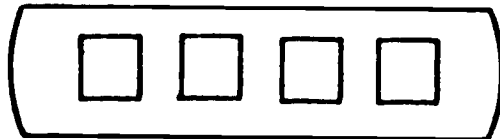
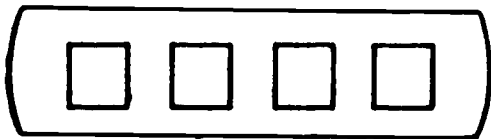
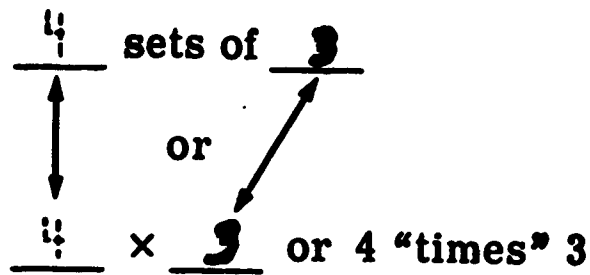
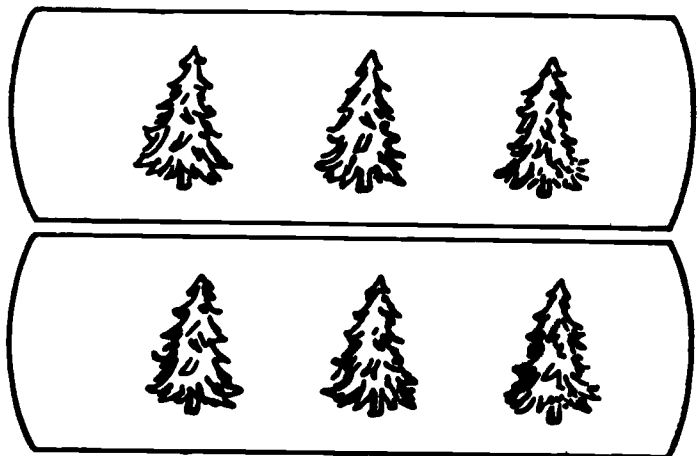
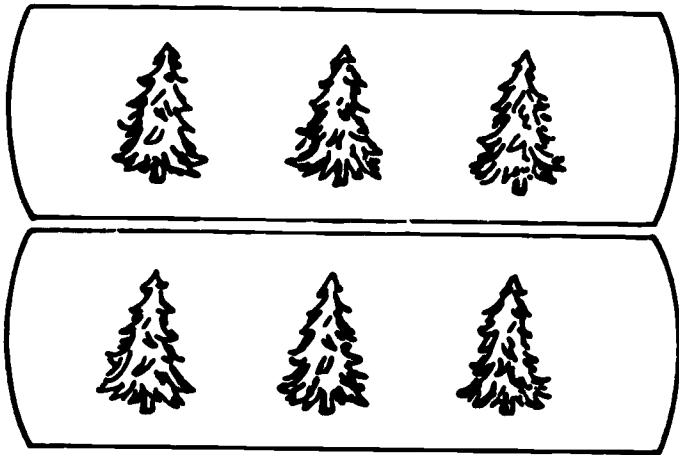


For extra practice, do Page 18.



Look at the sets.

Write the correct answer in each blank.



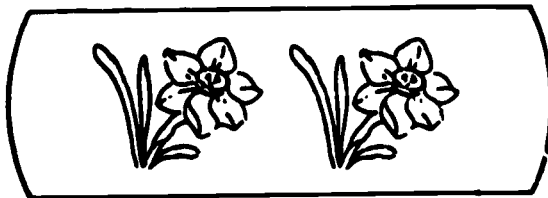
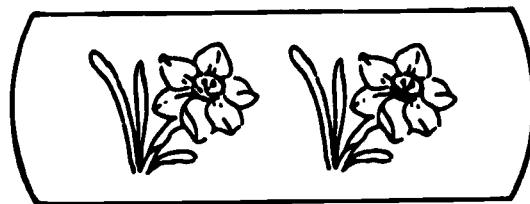
3 sets of 4

or

$3 \times$  4

For extra practice, do Page 19.

Write the correct answers in the blanks.



This picture shows 3 sets of 2.

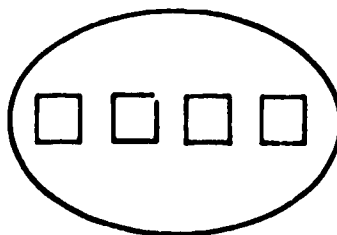
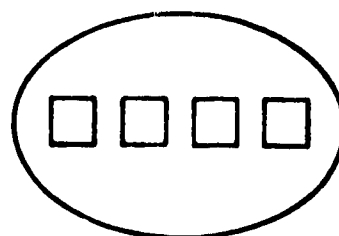
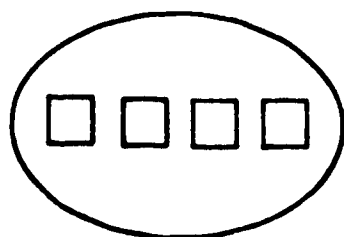
How many things altogether? 6

3 sets of 2 = 6. Write this as  $3 \times 2 = \underline{6}$ , and say 3 "times" 2 equals 6.

This is called multiplication.

$3 \times 2 = 6$  is a multiplication equation.

Write the correct answers in the blanks.

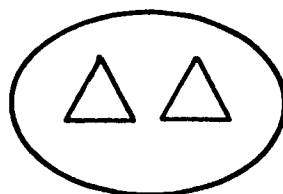
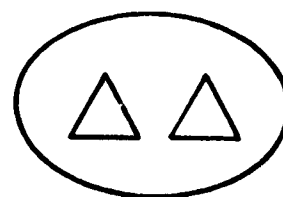
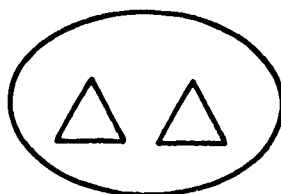
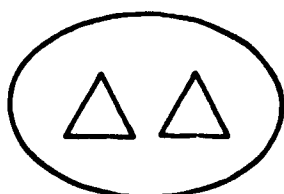


3 sets of 4 or 3  $\times$  4

How many things altogether? 12

3 sets of 4 = 12

Write this as  $3 \times 4 = \underline{12}$ , and say 3 "times" 4 is "equal" to 12.



4 sets of 2, or 4  $\times$  2

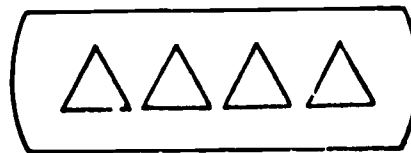
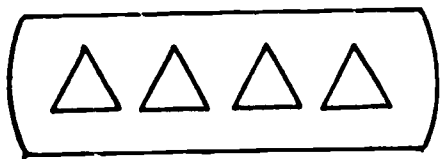
How many things altogether? 8

4 sets of 2 = 8

Write this as  $4 \times 2 = \underline{8}$

For extra practice, do Page 20.

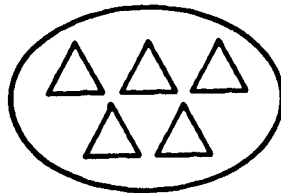
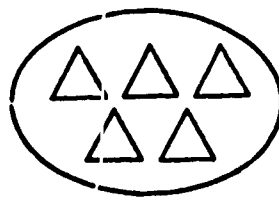
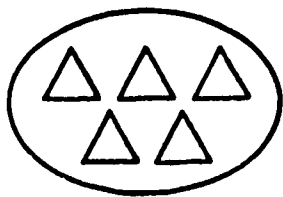
Write the multiplication equation for each picture. Fill in the blanks.



This picture shows 2 sets of 4.

How many triangles altogether? 8

$$\underline{2} \times \underline{4} = \underline{8}$$

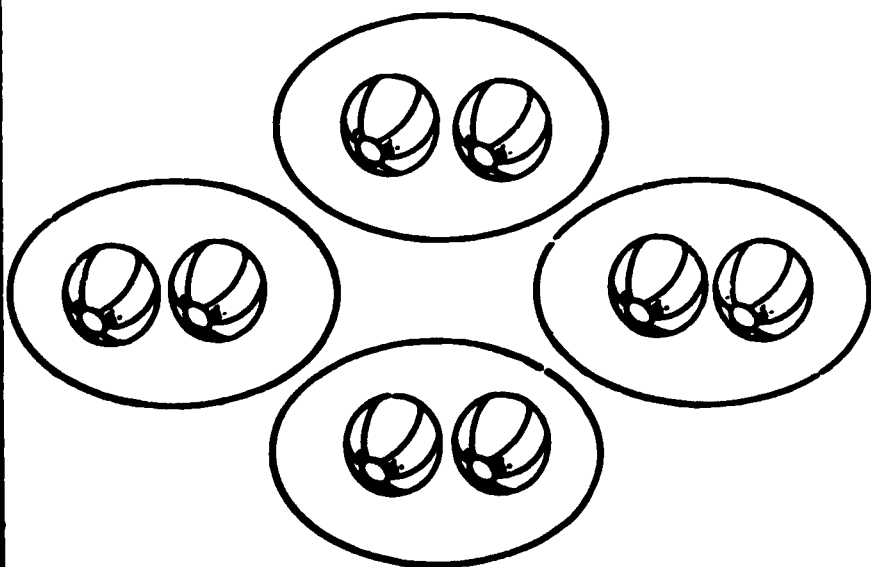


This picture shows 3 sets of 5.

How many triangles altogether? 15

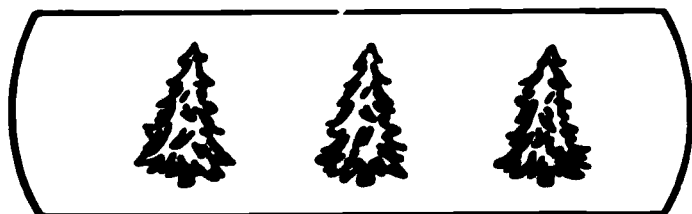
$$\underline{3} \times \underline{5} = \underline{15}$$

Write a multiplication equation for each picture.



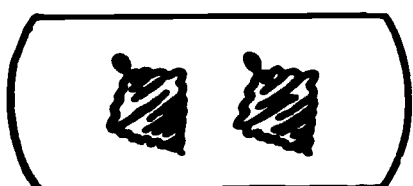
$$4 \text{ sets of } 2 = 4 \times \underline{2}$$

$$4 \times \underline{2} = 8$$



$$3 \text{ sets of } 3 = 3 \times \underline{3}$$

$$3 \times \underline{3} = 9$$

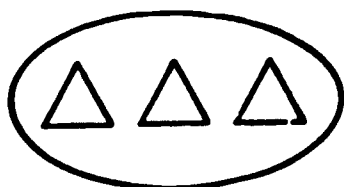


$$3 \text{ sets of } 2 = 3 \times \underline{2}$$

$$3 \times \underline{2} = 6$$

For extra practice, do Page 21.

Write a multiplication equation for each picture.



$$1 \text{ set of } \underline{3} = 1 \times \underline{3}$$

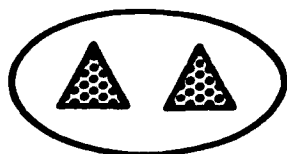
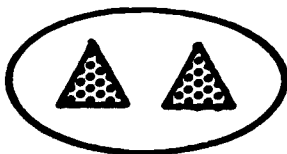
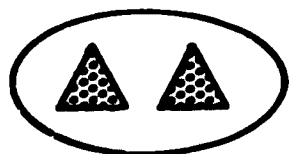
$$1 \times \underline{3} = \underline{3}$$



$$4 \text{ sets of } \underline{3} = 4 \times \underline{3}$$

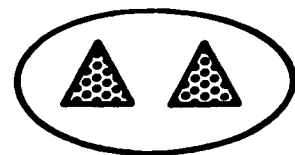
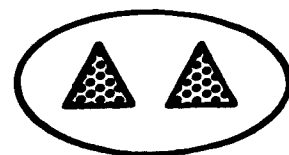


$$4 \times \underline{3} = \underline{12}$$



$$5 \text{ sets of } \underline{2} = 5 \times \underline{2}$$

$$5 \times \underline{2} = \underline{10}$$



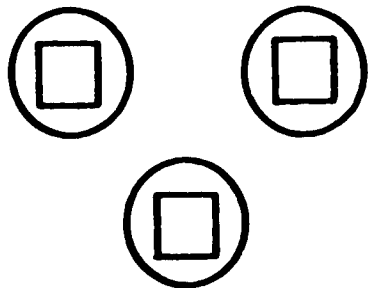
Write the multiplication equations for each picture.



$$\underline{2} \text{ sets of } \underline{5} = 2 \times \underline{5}$$

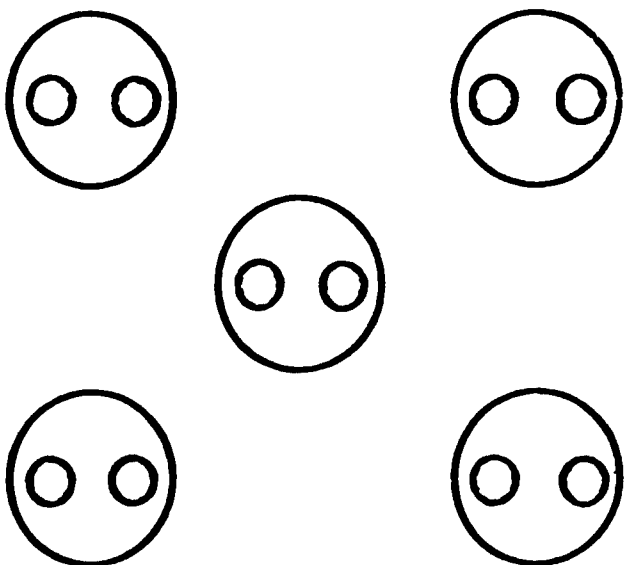


$$2 \times \underline{5} = \underline{10}$$



$$\underline{3} \text{ sets of } \underline{1} = 3 \times \underline{1}$$

$$3 \times \underline{1} = \underline{3}$$

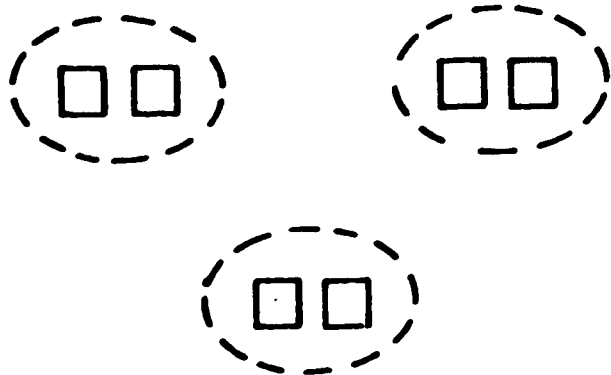


$$\underline{5} \text{ sets of } \underline{2} = 5 \times \underline{2}$$

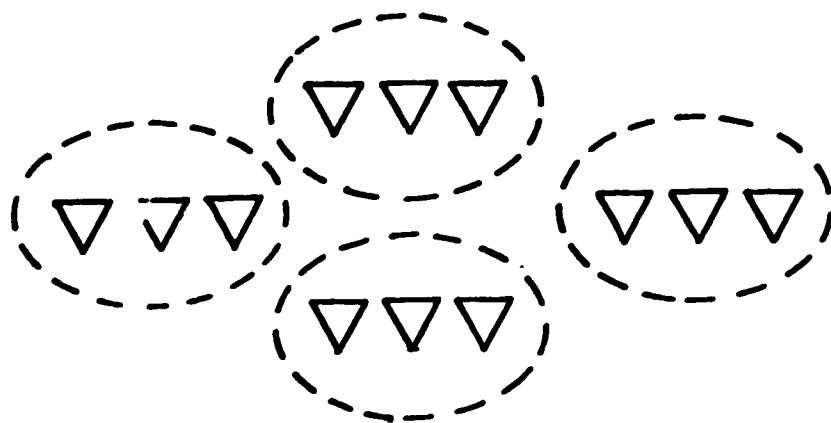
$$5 \times \underline{2} = \underline{10}$$

For extra practice, do Page 22.

Count how many objects there are altogether and write the correct answers in the blanks.



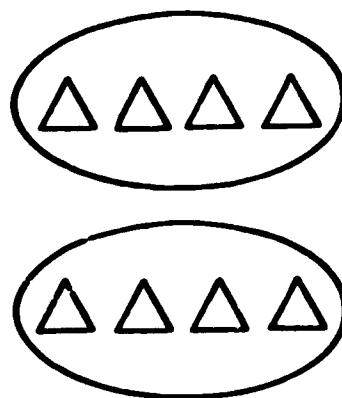
$$3 \times 2 = \underline{6}$$



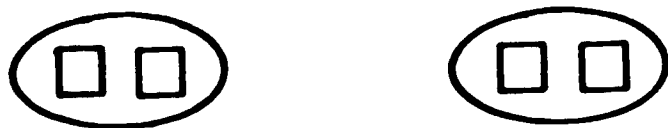
$$4 \times 3 = \underline{12}$$



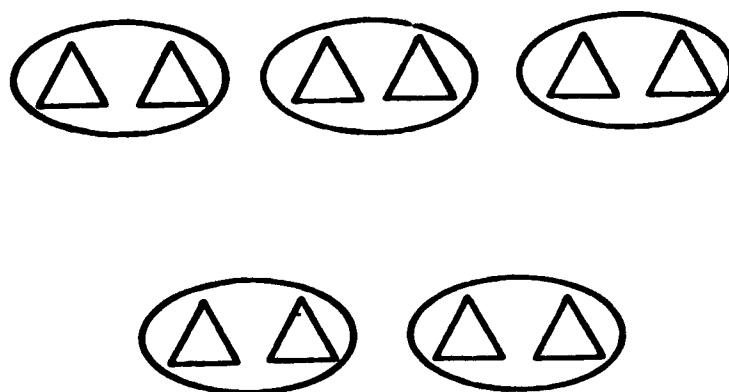
$$1 \times 5 = \underline{5}$$



$$2 \times 4 = \underline{8}$$



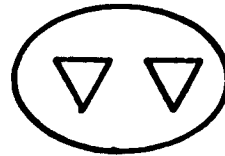
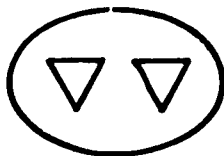
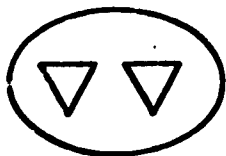
$$2 \times 2 = \underline{4}$$



$$5 \times 2 = \underline{10}$$

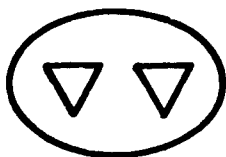
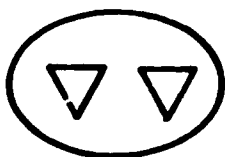
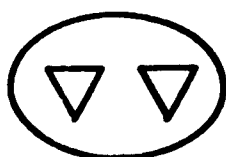


Write the multiplication equation for each picture.

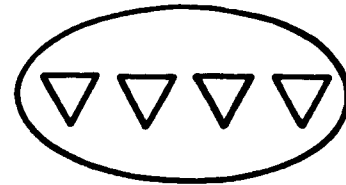
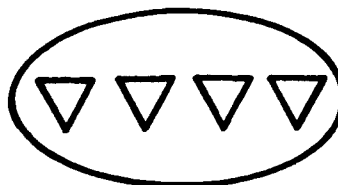


$$\underline{3} \text{ sets of } \underline{2} = \underline{6}$$

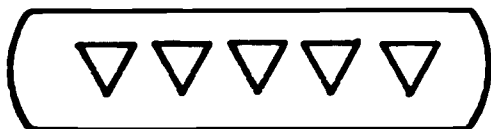
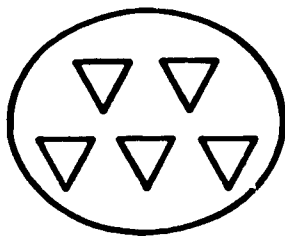
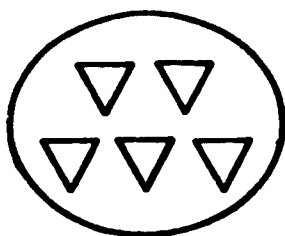
$$\underline{3} \times \underline{2} = \underline{6}$$



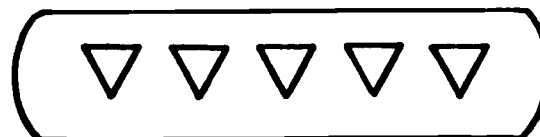
$$\underline{3} \times \underline{2} = \underline{6}$$



$$\underline{2} \times \underline{4} = \underline{8}$$

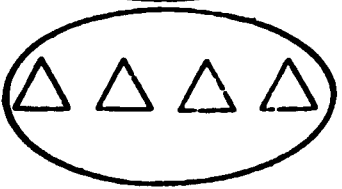
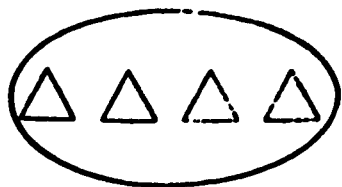


$$\underline{3} \times \underline{5} = \underline{15}$$

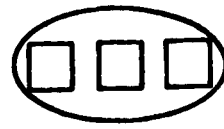
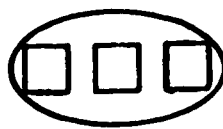
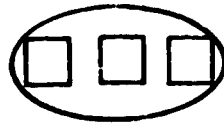
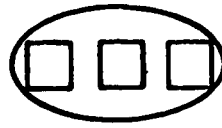
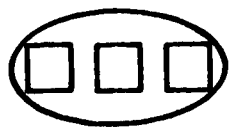


$$\underline{1} \times \underline{5} = \underline{5}$$

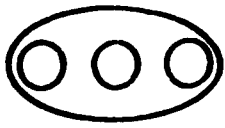
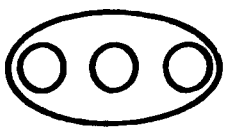
Write the multiplication equation for each picture.



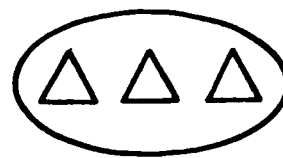
$$\underline{2} \times \underline{4} = \underline{8}$$



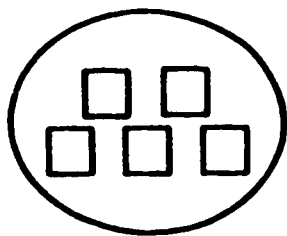
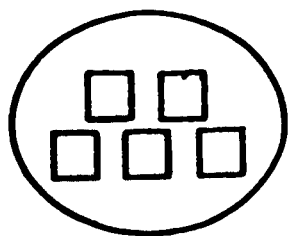
$$\underline{5} \times \underline{3} = \underline{15}$$



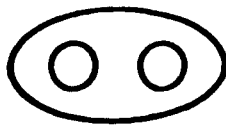
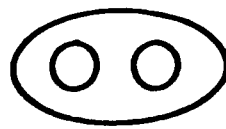
$$\underline{2} \times \underline{3} = \underline{6}$$



$$\underline{1} \times \underline{3} = \underline{3}$$



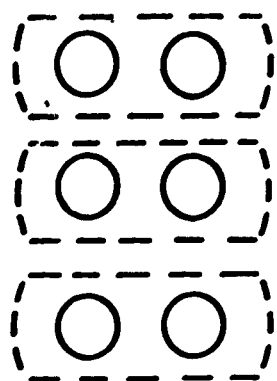
$$\underline{2} \times \underline{5} = \underline{10}$$



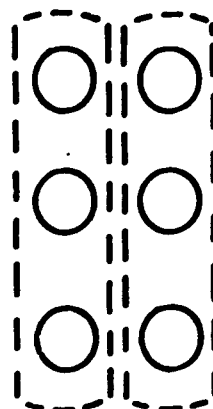
$$\underline{4} \times \underline{2} = \underline{8}$$

For extra practice, do Page 23.

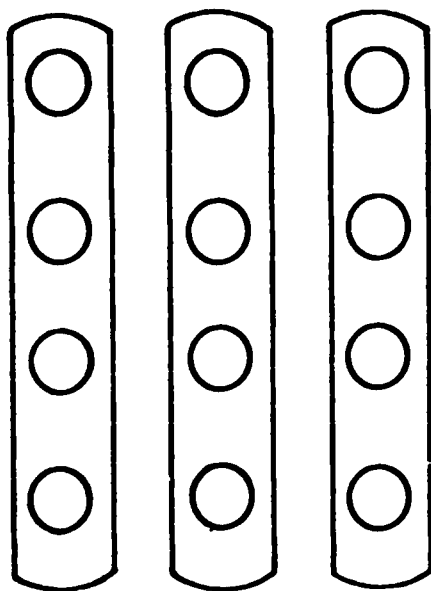
Circle the objects to make the pictures match the equations. Write the products in the blanks.



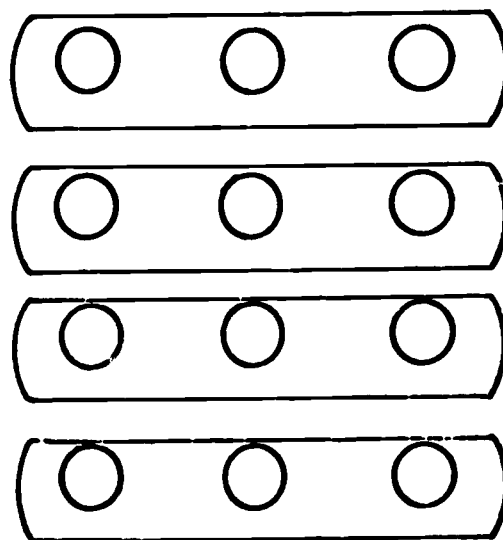
$$3 \times 2 = \underline{6}$$



$$2 \times 3 = \underline{6}$$



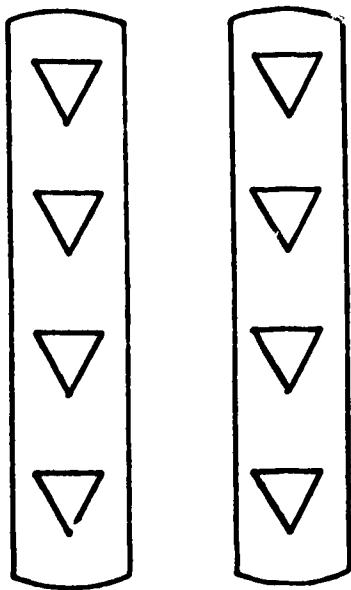
$$3 \times 4 = \underline{12}$$



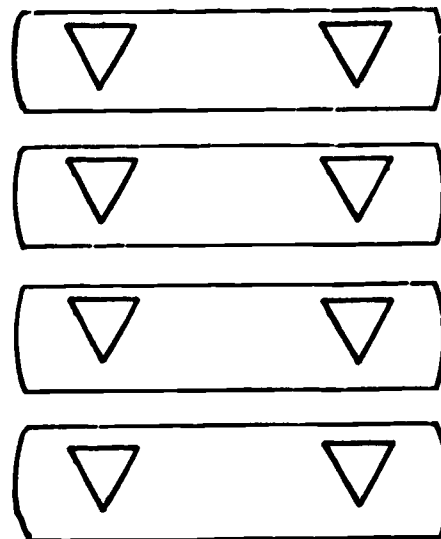
$$4 \times 3 = \underline{12}$$

For extra practice, do Page 24.

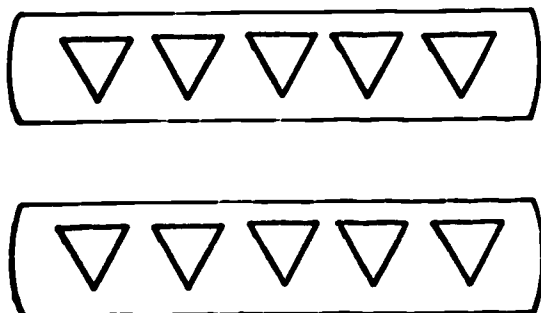
Circle the object to make the pictures match the equations. Write the products in the blanks.



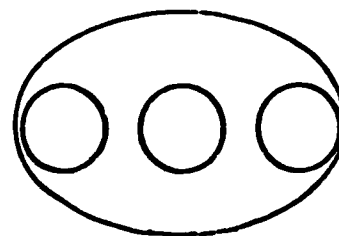
$$2 \times 4 = \underline{8}$$



$$4 \times 2 = \underline{8}$$



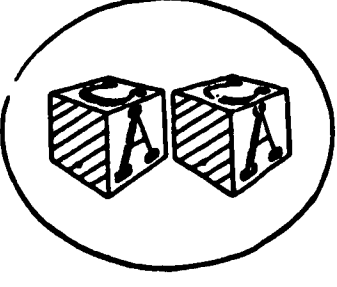
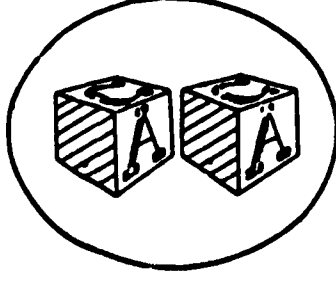
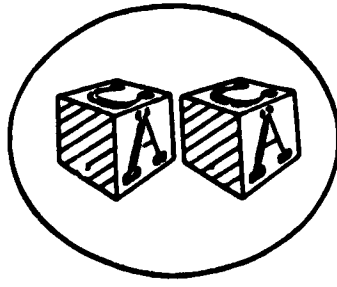
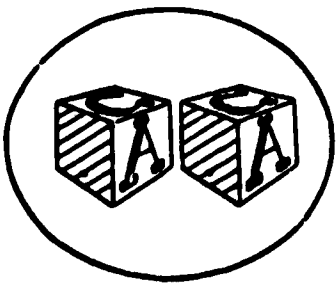
$$2 \times 5 = \underline{10}$$



$$1 \times 3 = \underline{3}$$

## CET I

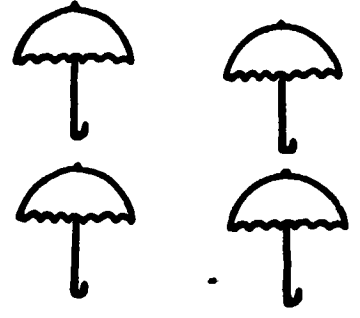
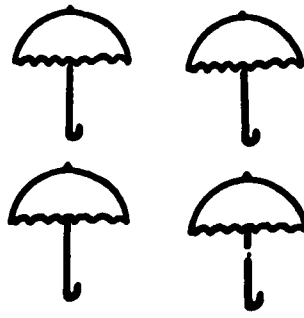
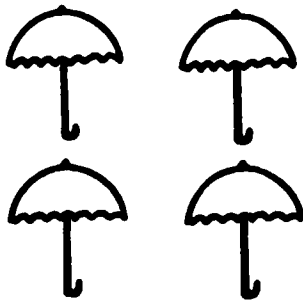
Write the correct numeral in the blank to complete each equation.



$$4 \text{ sets of } 2 = \underline{\quad}$$



$$2 \text{ sets of } 3 = \underline{\quad}$$

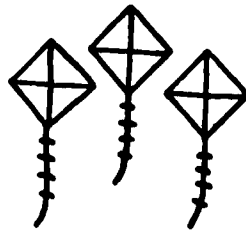
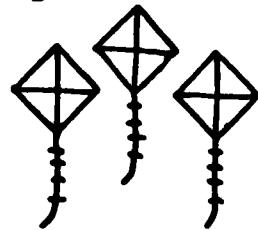
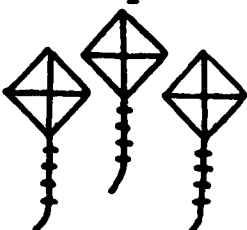


$$3 \times 4 = \underline{\quad}$$



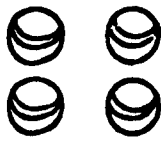
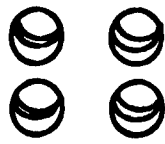
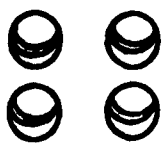
$$5 \times 2 = \underline{\quad}$$

Complete each equation.



$$3 + 3 + 3 = \underline{\quad}$$

$$3 \times 3 = \underline{\quad}$$



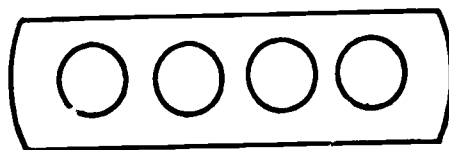
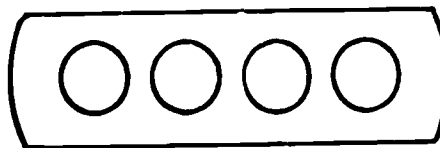
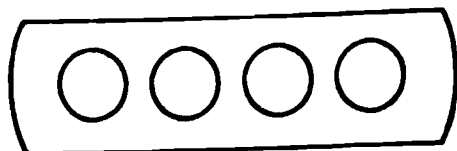
$$4 + 4 + 4 = \underline{\quad}$$

$$3 \times 4 = \underline{\quad}$$

C I R C L E	TL. PTS.	
	4	100%
	NO. OF PTS.	
	3	75
	2	50
C O R R E C T	1	25
B O X		

C I R C L E	TL. PTS.	
	4	100%
	NO. OF PTS.	
	3	75
	2	50
C O R R E C T	1	25
B O X		

Write the correct answers in the blanks.



How many sets? 3

How many in each set? 4

There are 3 sets of 4 things.

Write this as  $3 \times 4$ .

$\times$  means "times."

Look at the symbol  $3 \times 4$ .

**3** is the "number of sets."

$\times$  means "times."

**4** is the "number of things in each set."

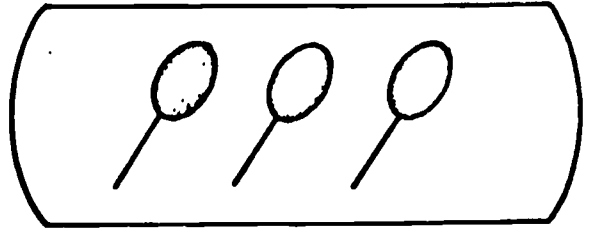
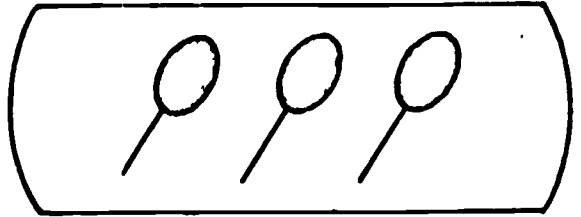
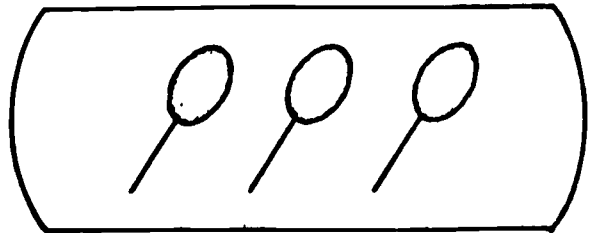
Write the correct answers in the blanks.

How many sets? 3

How many in each set? 3

3 sets of 3 can be written as

$$\underline{3} \times \underline{3}.$$

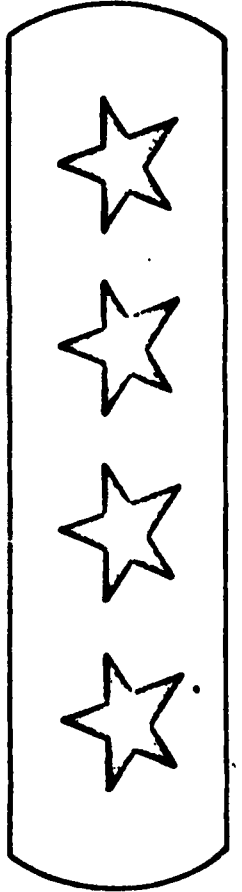
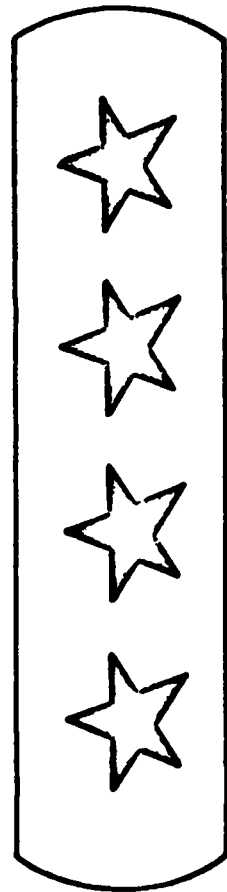
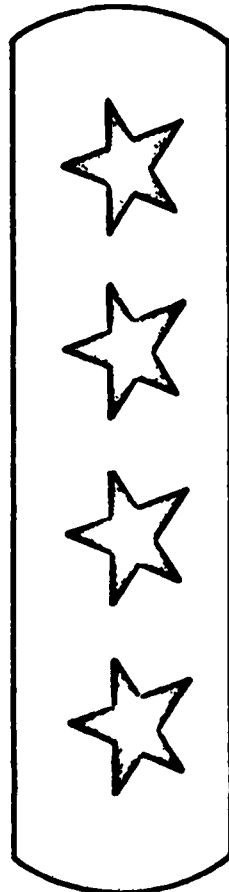


How many sets? 3

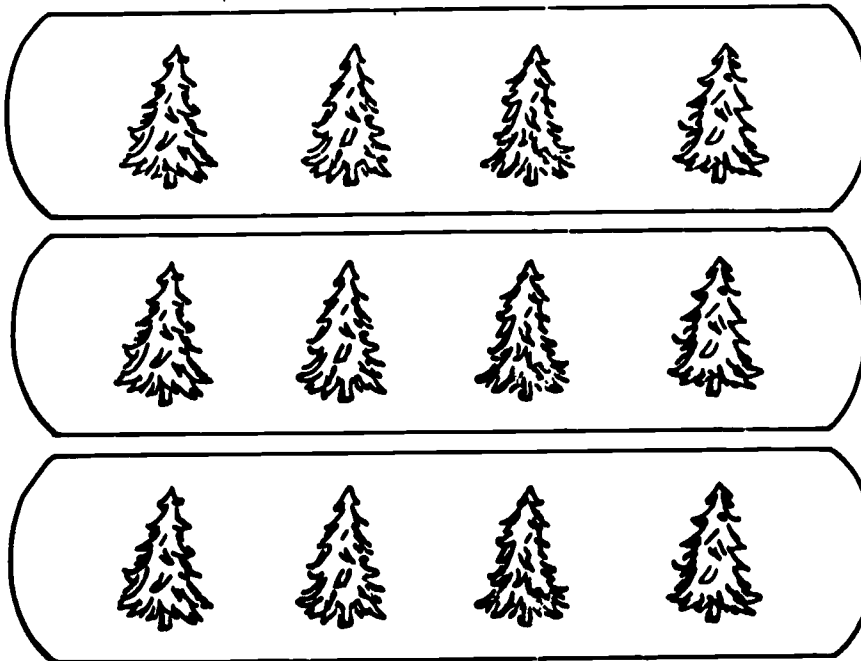
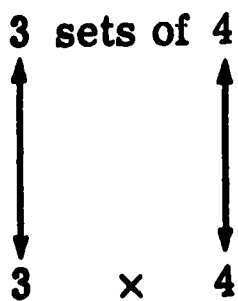
How many in each set? 4

3 sets of 4 can be written as

$$\underline{3} \times \underline{4}.$$



Write 3 sets of 4 as  $3 \times 4$ .



Pick out the expression from those in the box that matches each expression below. Write in the correct answers.

$1 \times 5$

$2 \times 4$

$5 \times 2$

$3 \times 2$

$3 \times 1$

$2 \times 3$

3 sets of 2

1 set of 5

2 sets of 4

5 sets of 2

2 sets of 3

3 sets of 1

$$\frac{3 \times 2}{\quad}$$

$$\frac{1 \times 5}{\quad}$$

$$\frac{2 \times 4}{\quad}$$

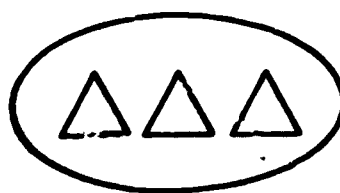
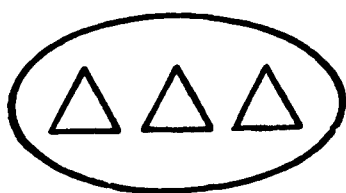
$$\frac{5 \times 2}{\quad}$$

$$\frac{2 \times 3}{\quad}$$

$$\frac{3 \times 1}{\quad}$$



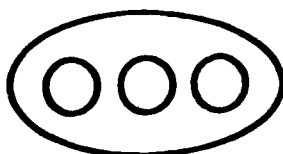
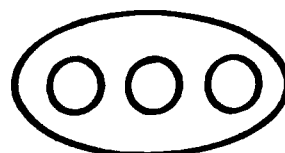
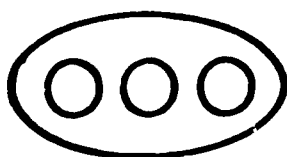
Look at the pictures. Answer the questions by filling in the blanks.



2 sets of 3

How many things altogether? 6

2 sets of 3 = 6

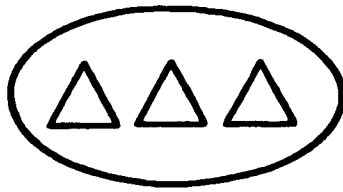
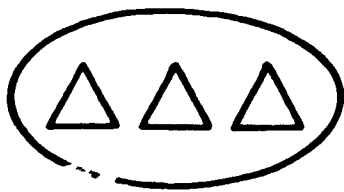


3 sets of 3

How many things altogether? 9

3 sets of 3 = 9

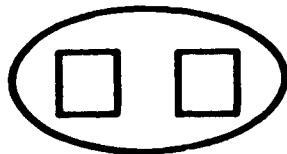
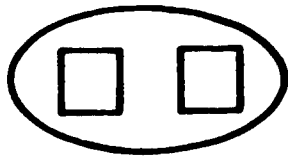
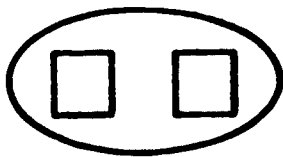
Write the correct answers in the blanks.



2 sets of 3

How many altogether? 6

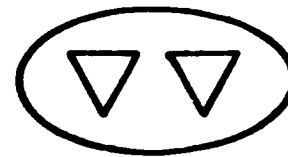
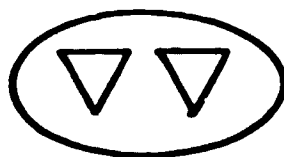
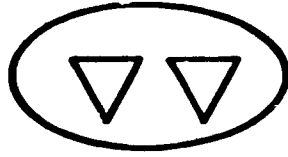
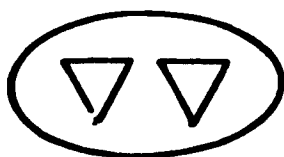
2 sets of 3 = 6



3 sets of 2

How many altogether? 6

3 sets of 2 = 6



4 sets of 2

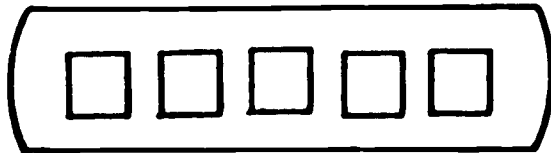
How many altogether? 8

4 sets of 2 = 8

or

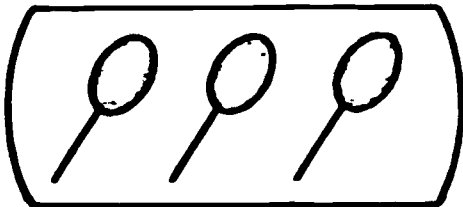
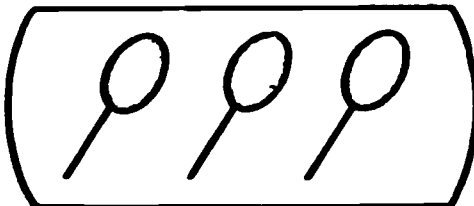
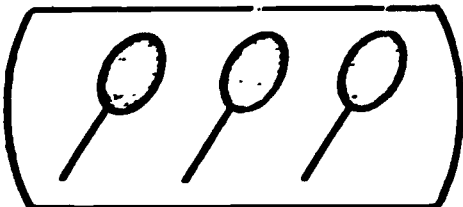
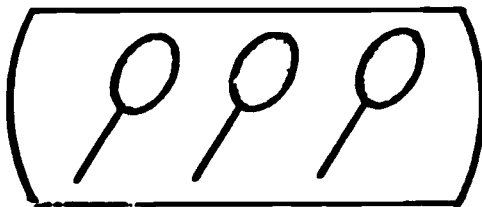
4 × 2 = 8

Write an equation for each problem and fill in the blanks.



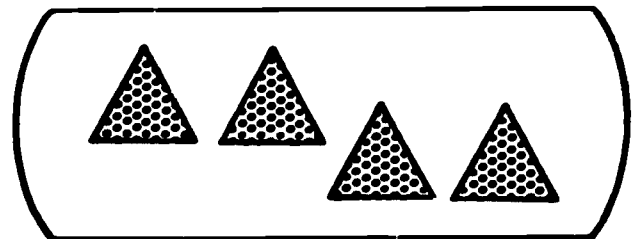
$$1 \text{ set of } \underline{5} = 1 \times \underline{5}$$

$$1 \times \underline{5} = 5$$



$$4 \text{ sets of } \underline{3} = 4 \times \underline{3}$$

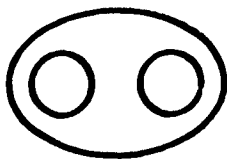
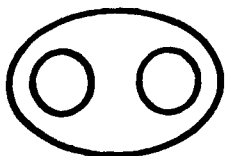
$$4 \times \underline{3} = 12$$



$$1 \text{ set of } \underline{4} = 1 \times \underline{4}$$

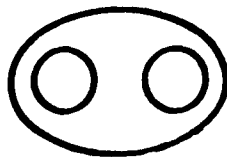
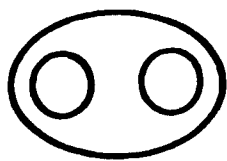
$$1 \times \underline{4} = \underline{4}$$

Write the correct answers in the blanks.



How many sets? 4

How many in each set? 2

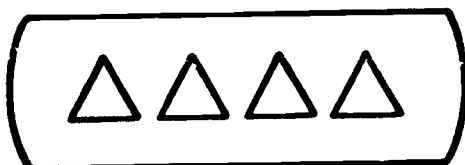


How many altogether? 8

$$\underline{4} \text{ sets of } \underline{2} = \underline{8}$$

or

$$\underline{4} \times \underline{2} = \underline{8}$$

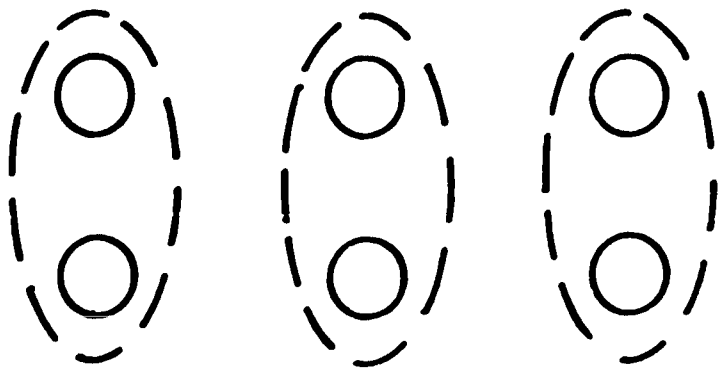


How many sets? 1

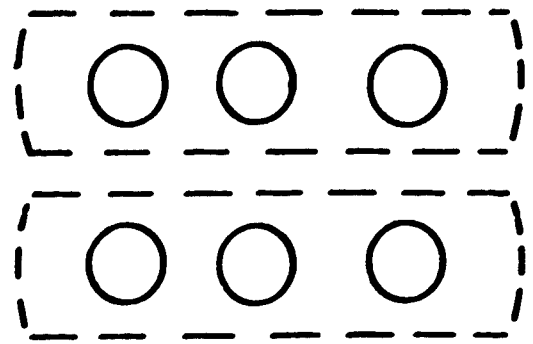
How many in each set? 4

$$\underline{1} \times \underline{4} = \underline{4}$$

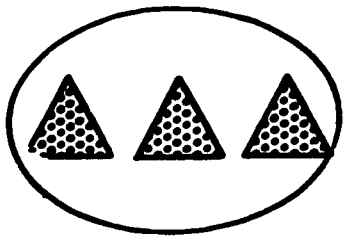
Circle the objects to make the pictures match the description.



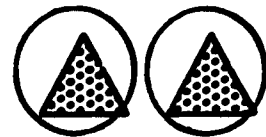
3 sets of 2



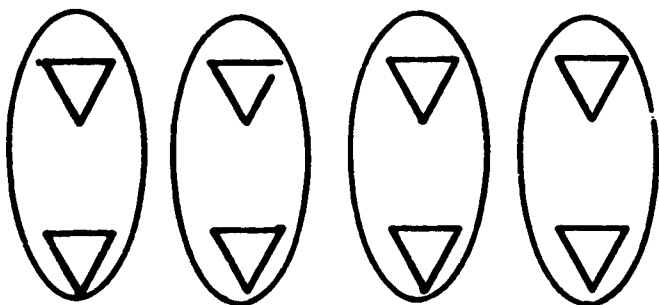
2 sets of 3



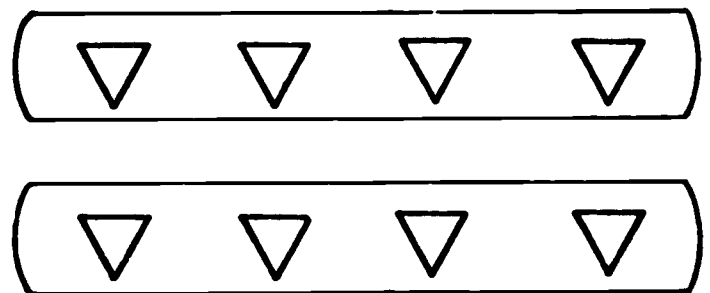
1 set of 3



2 sets of 1



4 sets of 2



2 sets of 4

CET II

Write the correct numeral in each blank to complete each equation.



5 sets of 2 = \_\_\_\_



4 sets of 5 = \_\_\_\_



3 x 4 = \_\_\_\_



5 x 2 = \_\_\_\_

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	4	100%
	NO. OF PTS.	1
	3	75
	2	50
	1	25

Complete each equation.



2 + 2 + 2 + 2 = \_\_\_\_

4 x 2 = \_\_\_\_



5 + 5 + 5 = \_\_\_\_

3 x 5 = \_\_\_\_



C I R C L E  C O R R E C T  B O X	TL. PTS.	
	4	100%
	NO. OF PTS.	1
	3	75
	2	50
	1	25

**OBJECTIVE:** Groups sets (or pictured sets) in order to complete statements. Given a picture of six objects grouped into sets of two, completes "3 sets of 2" = \_\_\_\_\_, and  $3 \times 2 =$  \_\_\_\_\_. Factors no larger than 5.

**STANDARD TEACHING SEQUENCE**

Page	Supplementary Material
1. Is given picture of 6 objects grouped in sets of 2. Finds how many sets, how many objects in each set, how many altogether. Writes "3 sets of 2" as $3 \times 2$ . Reads "x" as "times."	17
2. Is given picture of 6 objects grouped in sets of 2. Finds how many sets, how many objects in each set, writes $3 \times 2$ as 3 sets of 2, and 3 sets of 2 as $3 \times 2$ .	
3. Is given pictured sets, answers questions, and writes multiplication signs. For example, $5 \times 2$ is "5 sets of 2."	18
4. Is given pictured sets, fills in number of sets, how many objects in each set, using multiplication sign.	19
5. Given picture of 6 objects grouped in sets of 2, finds how many altogether. Reads multiplication equation, $3 \times 2 = 6$ , as "3 sets of 2" = 6, and 3 times 2 is equal to 6.	
6. Answers questions about pictured sets and solves multiplication equations.	20
7. Answers questions about pictured sets and solves multiplication equations.	
8. Writes problems such as 4 sets of 2 = $4 \times$ _____ and $4 \times$ _____ = 8 (using pictured sets).	21
9. Writes and solves problems such as 1 set of _____ = $1 \times$ _____ = _____ (using pictured sets).	
10. Writes and solves problems such as _____ sets of _____ = $5 \times$ _____ = _____ (using pictured sets).	
11. Uses pictured sets, solves multiplication equations. For example, $3 \times 2 =$ _____.	22
12. Uses pictured sets, writes what each picture shows, and solves equations.	
13. Uses pictured sets, writes what each picture shows, and solves equations.	23
14. Circles pictured objects to make picture match given multiplication equation. Solves equation.	24
15. Circles pictured objects to make picture match given multiplication equation. Solves equation.	
16. CET I.	
CET II.	25

Circle pages that are to be done.

## Standard Teaching Sequence, Con't.

1967 - 68

### Teaching Aids:

Assorted flashcards

Pupil's multiplication and division kit

Multo Game

Imma Whiz Game

Dominoes

Assorted counting aids - for regrouping - abacus - beads - sticks



These are the five skill sheets completed by Susan and corrected by the Aide.

Record (in role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets:

Susan can group different sets using factors 2 & 3.

Susan cannot use factors 4 & 5.

Describe how Susan worked with the prescription: Asked constantly  
for teacher approval as she worked through the materials.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Revise original prescription  
☒ Extend the prescription  
☐ Assign a CET for Skill #

Why? Susan still must learn to group sets using factors 4 and 5.

Based on the previous diagnosis of Susan's behavior, her performance on the unit pretest and, in particular, in the Skill 1 section, and Susan's work on these materials, she was assigned the following on 3/5:

<u>Page</u>	<u>Reason</u>
11	Practice on different arrangements of sets using factors 4 & 5.
13	Practice on different arrangements of sets using factors 4 & 5.

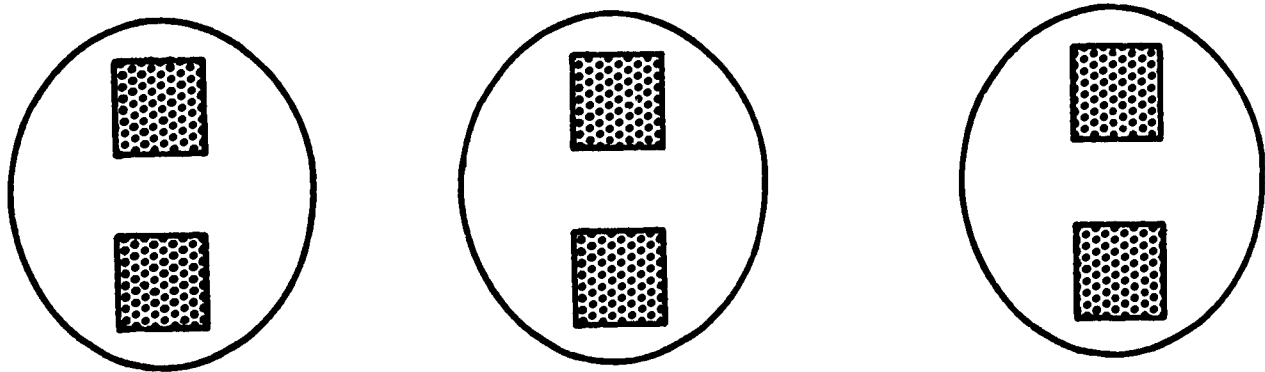
Estimate of time needed: 1 class period

Recheck these two pages.

Record these pages and date on the Prescription Sheet.

TO THE STUDENT

This picture shows \_\_\_\_ sets of \_\_\_\_ things.



How many things are there altogether?

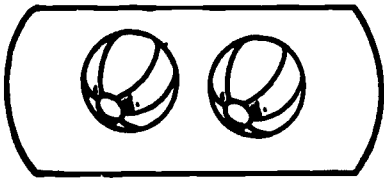
\_\_\_\_ sets of \_\_\_\_ things = \_\_\_\_ things

In this booklet you will do multiplication problems with the aid of pictured sets.

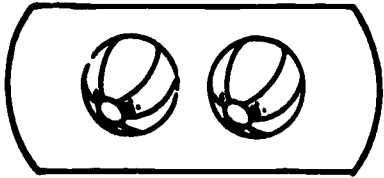
Answers

3	2	3	2	6
---	---	---	---	---

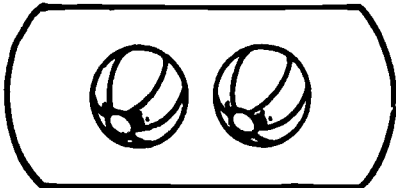
Write the correct answers in the blanks.



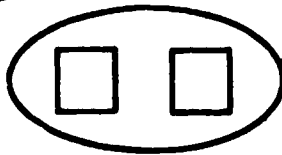
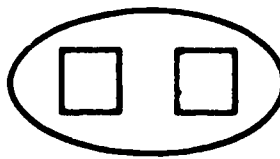
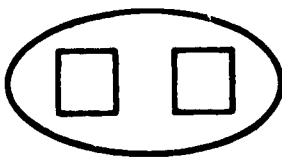
How many sets are circled? 3



How many balls in each set? 2



$3 \times 2$  means 3 sets of 2



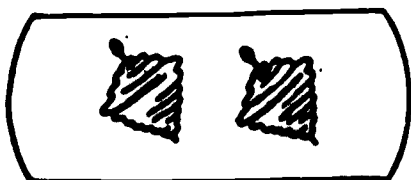
How many sets are circled? 3

How many squares in each set? 2

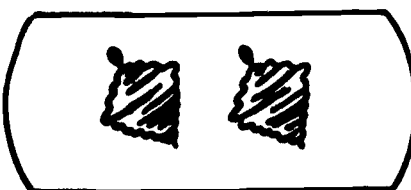
3 sets of 2 can be written as  $3 \times 2$

Write the correct answers in the blanks.

How many sets are circled? 2

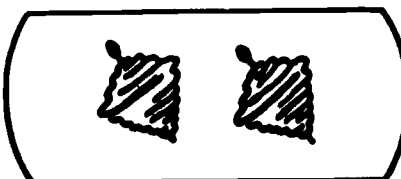


How many tops are in each set? 2

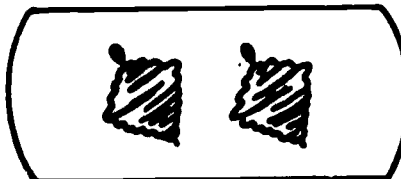


How many tops altogether? 4

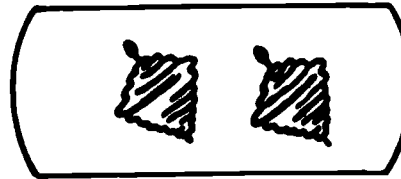
2 sets of 2 can be written as  $2 \times 2$



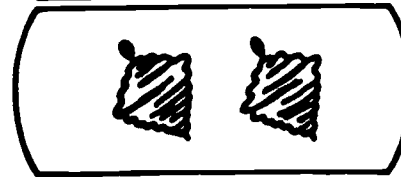
How many sets are circled? 5



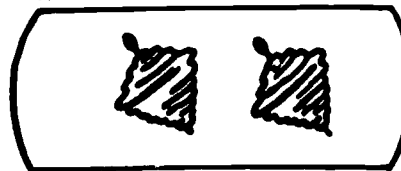
How many tops are in each set? 2



How many tops altogether? 10



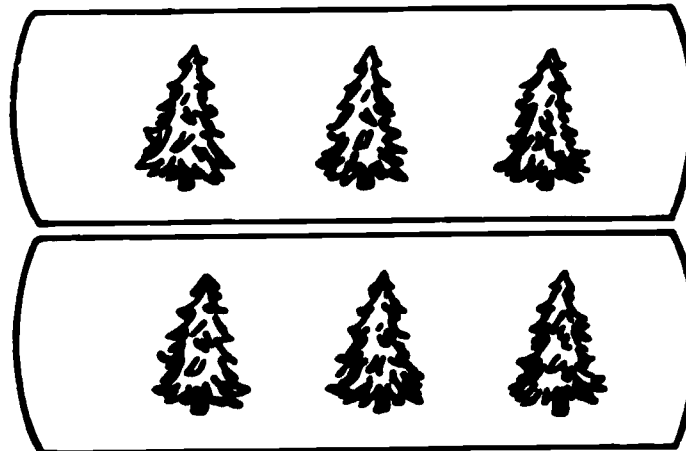
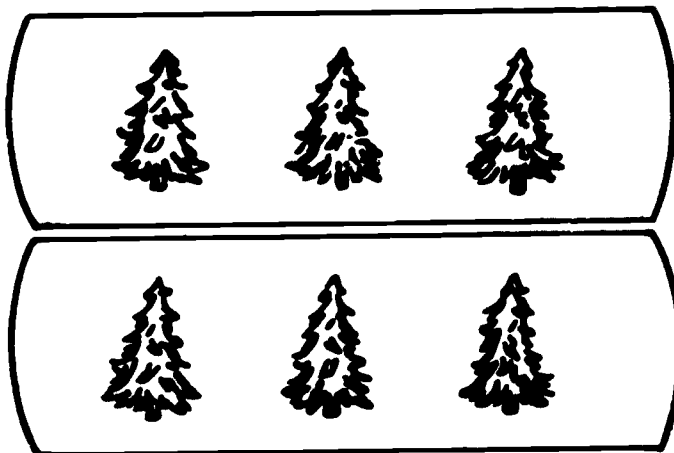
5 sets of 2 can be written as  $5 \times 2$



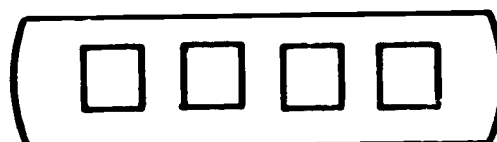
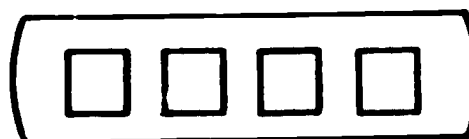
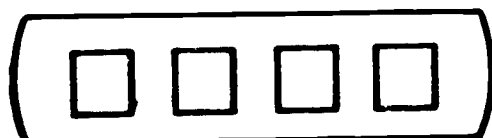
For extra practice do Page 18.

Look at the sets.

Write the correct answer in each blank.



$$\begin{array}{c} \underline{4} \\ \updownarrow \\ \underline{4} \end{array} \text{ sets of } \underline{3} \quad \text{or} \quad \underline{4} \times \underline{3} \text{ or 4 "times" 3}$$



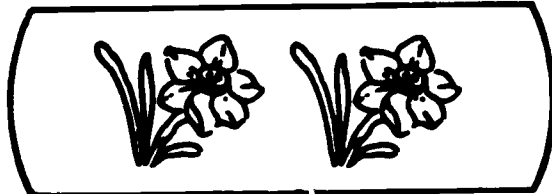
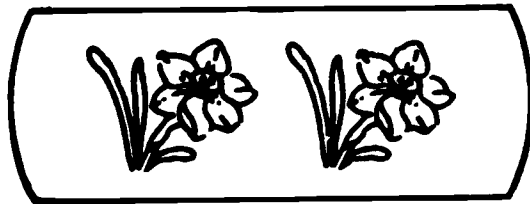
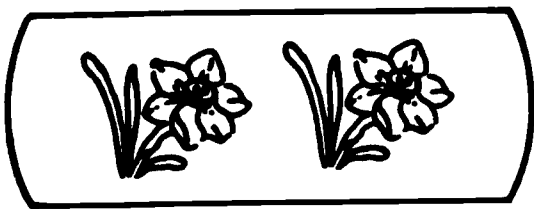
3 sets of 4

or

3 × 4

For extra practice, do Page 19.

Write the correct answers in the blanks.



This picture shows 3 sets of 2

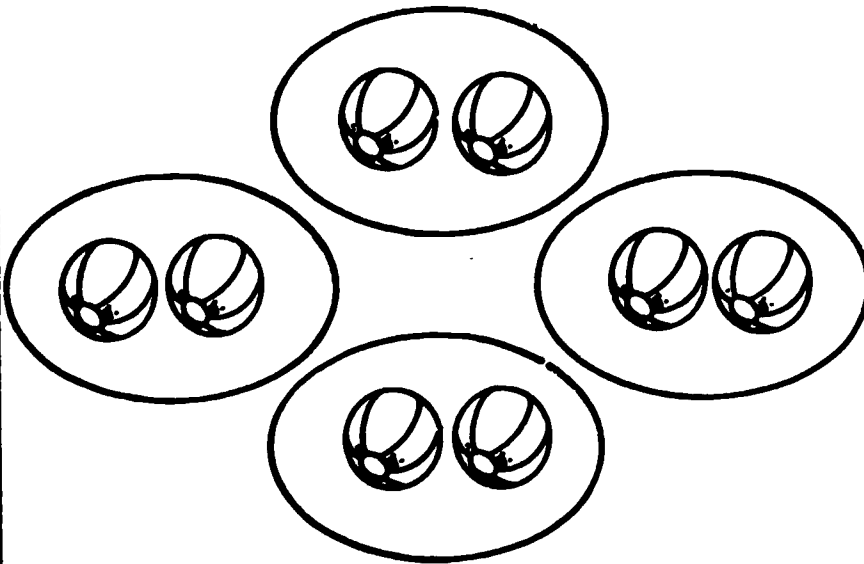
How many things altogether? 6

3 sets of 2 = 6. Write this as  $3 \times 2 = \underline{6}$ , and say 3 "times" 2 equals 6.

This is called multiplication.

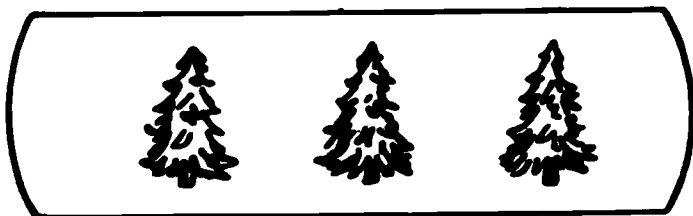
$3 \times 2 = 6$  is a multiplication equation.

Write a multiplication equation for each picture.



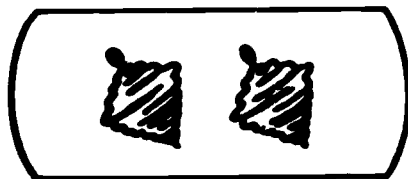
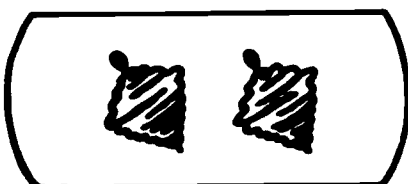
4 sets of 2 =  $4 \times \underline{2}$

$4 \times \underline{2} = 8$



3 sets of 3 =  $3 \times \underline{3}$

$3 \times \underline{3} = 9$



3 sets of 2 =  $3 \times \underline{2}$

$3 \times \underline{2} = 6$

For extra practice, do Page 21.

These are the two skill sheets completed by Susan and corrected by the Aide.

Record (in role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets.

Susan can: Group sets using factors 4 & 5.

Susan cannot: \_\_\_\_\_

Describe how Susan worked with the prescription: Continues to request excessive amount of teacher approval.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐        Revise original prescription
- ☐        Extend the prescription
- ☒   X   Assign a CET for Skill   1

Why: Work on skill sheet indicates mastery of Skill 1.

Based on the previous diagnosis of Susan's behavior, her performance on the unit Pretest and, in particular, in the Skill 1 section, and Susan's work on these materials, she was assigned the following on 3/6:

<u>Page</u>	<u>Reason</u>
16	CET to test mastery of Skill 1

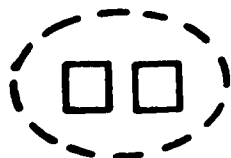
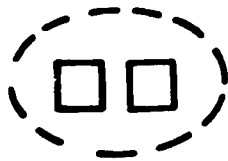
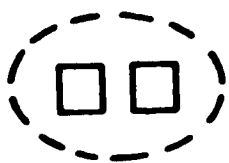
Estimate of time needed: 20 minutes maximum.

Recheck this CET.

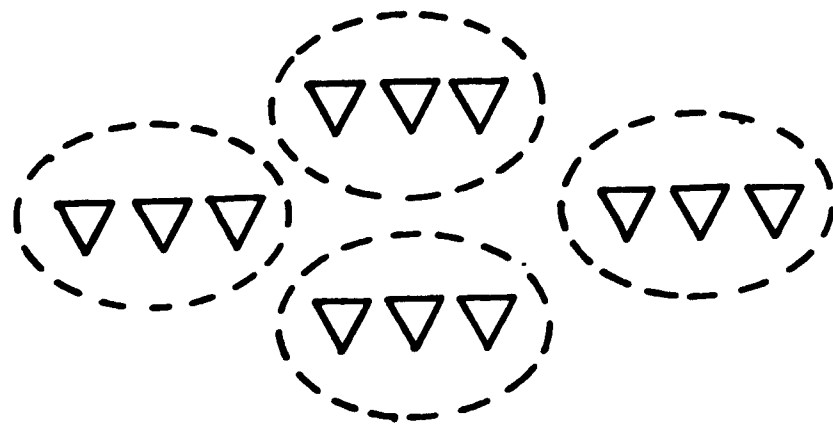
Record the page and date on the Prescription Sheet.



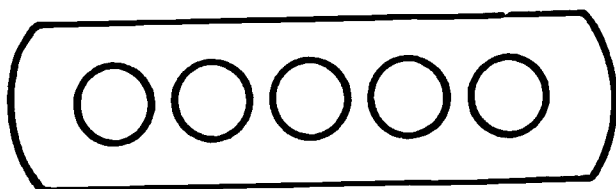
Count how many objects there are altogether and write the correct answers in the blanks.



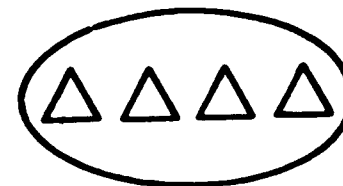
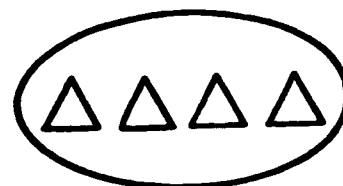
$$3 \times 2 = \underline{6}$$



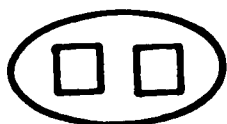
$$4 \times 3 = \underline{12}$$



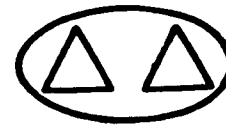
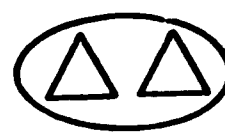
$$1 \times 5 = \underline{5}$$



$$2 \times 4 = \underline{8}$$

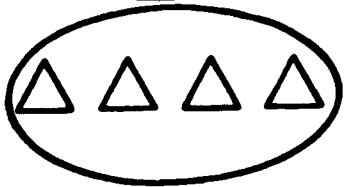
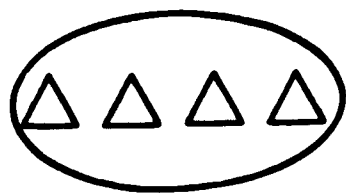


$$2 \times 2 = \underline{4}$$

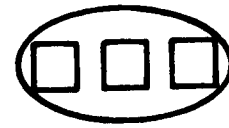
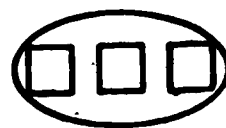
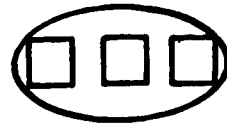
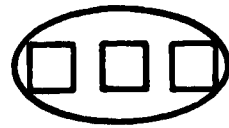
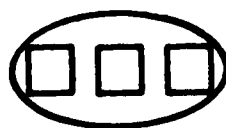


$$5 \times 2 = \underline{10}$$

Write the multiplication equation for each picture.



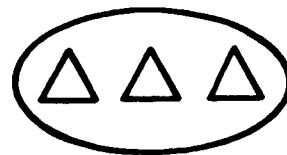
$$\underline{2} \times \underline{4} = \underline{8}$$



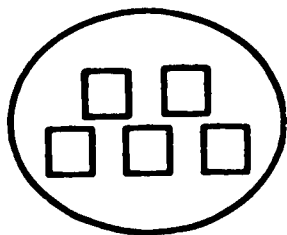
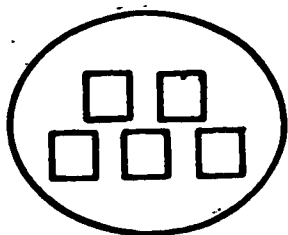
$$\underline{5} \times \underline{3} = \underline{15}$$



$$\underline{2} \times \underline{3} = \underline{6}$$



$$\underline{1} \times \underline{3} = \underline{3}$$



$$\underline{2} \times \underline{5} = \underline{10}$$



$$\underline{4} \times \underline{2} = \underline{8}$$

For extra practice, to Page 23.

This is the CET completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the CET.

Susan can: Part I - Group different sets using factors 2-5.  
Part II - Susan demonstrates possible mastery of Skill 2 even though  
Pretest score for this skill was 0%.

Susan cannot: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Describe how Susan worked with the prescription: Susan requested  
teacher approval. When directed to work independently, Susan was  
able to do so.

Based on your analysis of Susan's work, you decide to: (check one)

- \_\_\_\_\_ Extend prescription for the same skill.  
\_\_\_\_\_ Assign a second CET for the same skill.  
  X   Assign entire CET for Skill # 2.  
\_\_\_\_\_ Assign Part II of CET for Skill # \_\_\_\_\_.  
\_\_\_\_\_ Write initial prescription for Skill # \_\_\_\_\_.

Why? To determine if Susan has mastered Skill 2 while mastering  
Skill 1.

Based on the previous diagnosis of Susan's behavior, her performance on the unit Pretest (Skill 2, in particular), and Part II of CET for Skill 1, she was assigned the following on 3/6:

<u>Page</u>	<u>Reason</u>
16 P	CET to test mastery of Skill 2.

(P = CET pad)

Estimate of time needed: 20 minutes maximum.

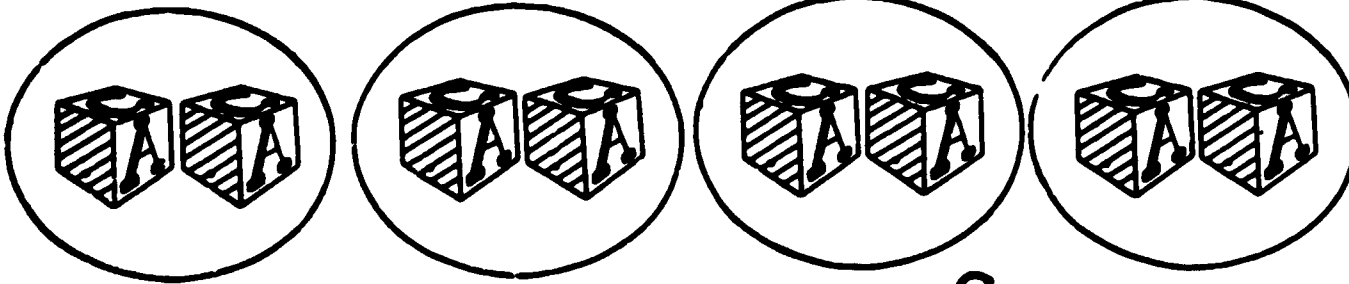
Examine the objective for Skill 2 and recheck this CET (Skill 2 STS booklet).

Record the page and date on the Prescription Sheet.

CET I

Write the correct numeral in the blank to complete each equation.

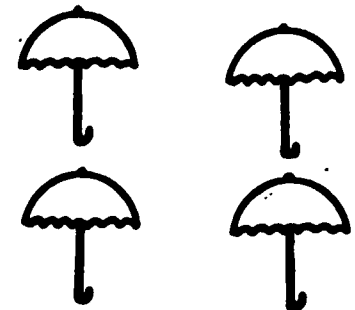
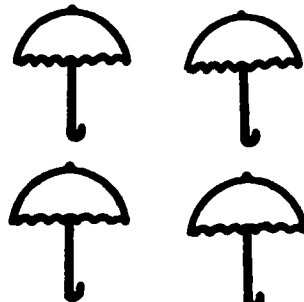
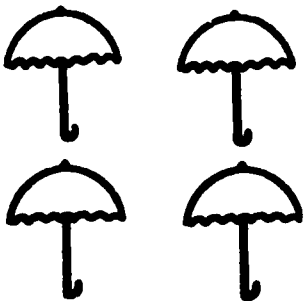
C I R C L E  C O R R E C T  B O X	TL. PTS.	
	4	100%
	NO. OF PTS.	
	3	75
	2	50
	1	25



4 sets of 2 = 8



2 sets of 3 = 6

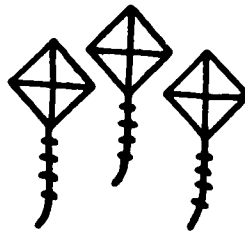
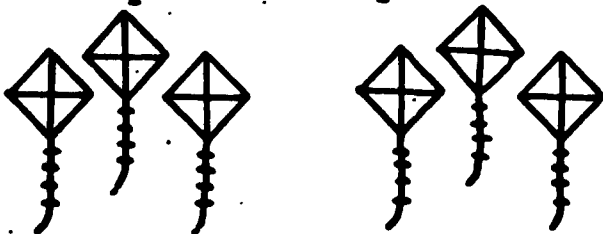


3 x 4 = 12



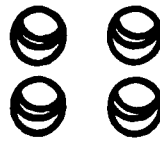
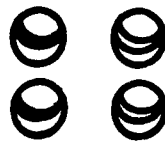
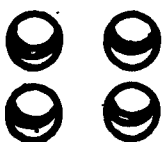
5 x 2 = 10

Complete each equation.



3 + 3 + 3 = 9

3 x 3 = 9



4 + 4 + 4 = 12

3 x 4 = 12

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	4	100%
	NO. OF PTS.	
	3	75
	2	50
	1	25

This is the Skill 2 CET completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the CET.

Susan can: Part I - Use repeated addition to solve multiplication problems up to 5 x 10.

Part II - Complete multiplication examples using factors of 0, 1.

Susan cannot: \_\_\_\_\_

Describe how Susan worked with the prescription: Susan obtained and completed the CET independently.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for same skill.
- ☐ Assign a second CET for the same skill.
- ☒ Assign entire CET for Skill # 3.
- ☐ Assign Part II of CET for Skill # \_\_\_\_.
- ☐ Write initial prescription for Skill # \_\_\_\_.

Why? Pretest score (Skill 3) was 100%; Part II of this CET was near mastery; past performance indicates Susan's mastery of this skill; teacher judgment accepts the 83% as high probability of mastery.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 3, in particular), and Part II of CET for Skill 2, she was assigned the following on 3/7:

Brief pupil-teacher conference to discuss completed CET.

<u>Page</u>	<u>Reason</u>
17 P	CET to test mastery of Skill 3.

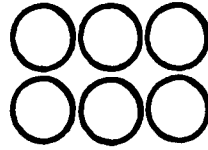
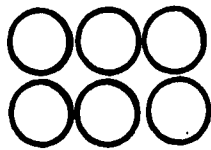
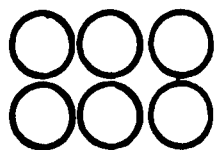
Estimate of time needed: 20 minutes maximum.

Examine the objective for Skill 3 and recheck this CET (Skill 3 STS booklet).

Record the page and date on the Prescription Sheet.

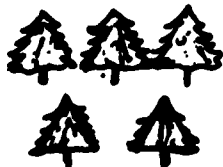
CET I

Solve each equation.



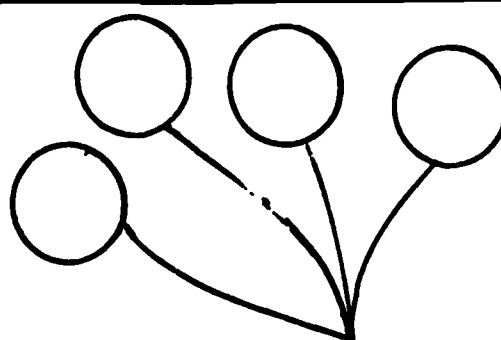
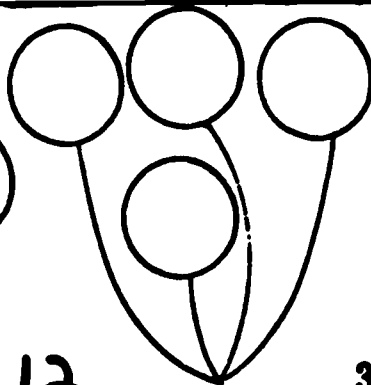
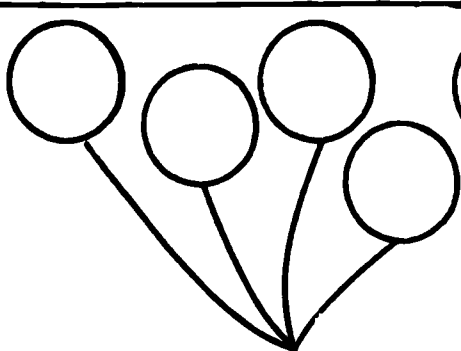
$$6 + 6 + 6 = \underline{18}$$

$$3 \times 6 = \underline{18}$$



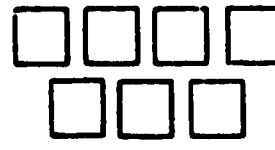
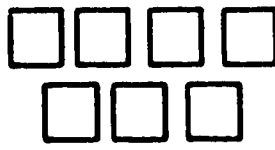
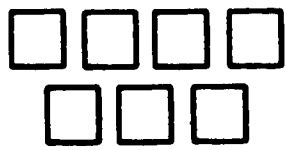
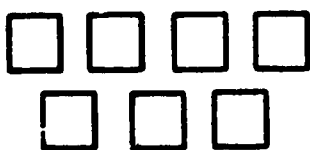
$$5 + 5 + 5 = \underline{15}$$

$$3 \times 5 = \underline{15}$$



$$4 + 4 + 4 = \underline{12}$$

$$3 \times 4 = \underline{12}$$



$$7 + 7 + 7 + 7 = \underline{28}$$

$$4 \times 7 = \underline{28}$$

Multiply.

$$4 \times 1 = \underline{4}$$

$$6 \times 0 = \underline{0}$$

$$\begin{array}{r} 8 \\ \times 1 \\ \hline 8 \end{array}$$

~~$$\begin{array}{r} 7 \\ \times 0 \\ \hline 7 \end{array}$$~~

$$\begin{array}{r} 3 \\ \times 1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 8 \\ \times 0 \\ \hline 0 \end{array}$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	8	100%
	NO. OF PTS.	%
	7	88
	6	75
	5	63
	4	50
	3	38
	2	25
	1	13

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	6	100%
	NO. OF PTS.	%
	5	83
	4	67
	3	50
	2	33
	1	17

This is the Skill 3 CET completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the CET.

Susan can: Part I - Complete multiplication problems using factors 0, 1.

Susan cannot: Complete multiplication problems using factors 2-5 without pictured sets.

Describe how Susan worked with the prescription: Susan worked independently on Part I; requested constant help on Part II.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for Skill #\_\_\_\_\_.
- ☐ Assign Part II of CET for Skill #\_\_\_\_\_.
- ☒ Write initial prescription for Skill # 4.

Why? Part II of CET indicates no mastery of Skill 4; Pretest score (15%) substantiates this.

Before writing the prescription for Skill 4, compare your prescription with the model Prescription Sheet on page 243. This Prescription Sheet contains all the information entered to this point.

## CET I

Multiply.

$$\begin{array}{r} 9 \\ \times 1 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 1 \\ \times 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 7 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 10 \\ \times 0 \\ \hline 0 \end{array}$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	NO. OF PTS.	%
	12	100%
	11	92
	10	83
	9	75
	8	67
	7	58
	6	50
	5	42
	4	33
	3	25
	2	17
	1	8

$$\begin{array}{r} 0 \\ \times 1 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 1 \\ \times 10 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 4 \\ \times 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 1 \\ \times 5 \\ \hline 5 \end{array}$$

$$0 \times 3 = \underline{0}$$

$$3 \times 1 = \underline{3}$$

$$1 \times 7 = \underline{7}$$

$$1 \times 6 = \underline{6}$$

Multiply.

$$\begin{array}{r} 2 \\ \times 5 \\ \hline \end{array} X$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array} X$$

$$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array} X$$

$$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array} X$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline \end{array} X$$

$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array} X$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline \end{array} X$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	NO. OF PTS.	%
	7	100%
	6	86
	5	71
	4	57
	3	43
	2	29
	1	14
	0	0



**Review the information on the model sheet to get a total picture of Susan's progress.**

**Check your Prescription Sheet against this model.**

**If the information on your sheet is recorded incorrectly, refer to the point in these materials where you made your error by using the page references on the model.**

STUDENT NUMBER	1	2	3	4
U. S.	4	5	6	7

UNIT D-Mult.

--	--	--

  
4, 2, 4, 5, 7 U. 

--	--	--

**BEG**  
**END**  
**Work**

## Page References

CURRICULUM TEST				SC'S INIT.	DAYS WORKED IN SKILL	NOTES
PART 1		PART 2				
SCORE	% S. 72-73	SCORE	% S. 74-75		S. 76-77	
				SD		192
				SD	1	
				JW		
				JW		
				JW	2	
				SD		236
				SD	3	
4/4	100	4/4	100	JW	4	238
8/8	100	5/6	83	JW	1	236
12/12	100	6/7	0	SD	1	238

## OVERFLOW

PUNCH SAMPLE				PRE AND POST TEST SCORES									
PRE %	POST %	U. 32-33	U. 34-35	ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
				▼			▼		▼		▼		▼
				X ①	5	3	60						
				X ②	5	0	0						
				X 3	9	8	100						
				X ④	20	3	15						
				X ⑤	5	0	0						
				X 6	5	2	40						
				X ⑦	5	0	0						
				X 8	5	5	100						

This is a copy of the STS booklet for Skill 4.  
Examine all the skill sheets and STS sheets (pp. 12 & 13) in the booklet to become familiar with the materials for this skill.

Based on the diagnosis of Susan's behavior, her progress to this point, her performance on the Pretest (Skill 4, in particular), and Part II of CET for Skill 3, she was assigned the following on 3/7:

<u>Page</u>		
Student	Page	
		Introduces skill; previews work
1		Multiplication equations using factors 0-2
2		Multiplication equations using factors 3-5
3		Additional practice equations using factors 1-5
*12R	09	Disc on using factor of 3 in multiplication equations
	13R	Disc on timed practice of 3's multiplication table.

\*Code 09 (records) tells Susan to use discs with these skill sheets and guides her to the location of the materials she needs for this prescription.

Estimate of time needed: 2 class periods.

Recheck these 5 pages and the 2 disc scripts.

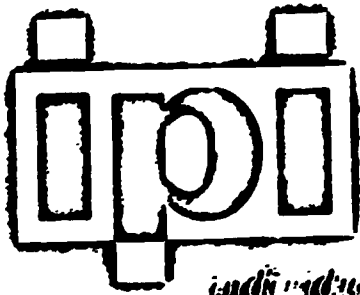
Record these pages on the Prescription Sheet.

SCHOOL CODE

NAME \_\_\_\_\_

NUMBER \_\_\_\_\_

CLASS \_\_\_\_\_



*individually prescribed instruction*

**MATHEMATICS**

# Standard Teaching Sequence Booklet

TEACHING SEQUENCE

**LEVEL D**

**MULTIPLICATION (05)**

**SKILL 4**

Based upon materials developed by The Mathematics Curriculum Staff,  
Learning Research and Development Center, University of Pittsburgh; Joseph  
I. Lipson, Ph.D., Director; Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome D. Kaplan, Ed.D., Teachers College, Columbia University

Appleton-Century-Crofts



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## DEVELOPMENTAL EDITION

## TO THE STUDENT

Can you do these problems? Write your answers in the blanks.

$$4 \times 2 = \underline{\quad}$$

$$3 \times 4 = \underline{\quad}$$

$$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 9 \\ \hline \end{array}$$

You will practice problems like these in this booklet.

**Answers**

**8, 12**

**5, 27**

Complete each equation.

$0 \times 0 = \underline{0}$

$0 \times 1 = \underline{0}$

$0 \times 2 = \underline{0}$

$1 \times 0 = \underline{0}$

$1 \times 1 = \underline{1}$

$1 \times 2 = \underline{2}$

$2 \times 0 = \underline{0}$

$2 \times 1 = \underline{2}$

$2 \times 2 = \underline{4}$

$3 \times 0 = \underline{0}$

$3 \times 1 = \underline{3}$

$3 \times 2 = \underline{6}$

$4 \times 0 = \underline{0}$

$4 \times 1 = \underline{4}$

$4 \times 2 = \underline{8}$

$5 \times 0 = \underline{0}$

$5 \times 1 = \underline{5}$

$5 \times 2 = \underline{10}$

Complete each equation.

$0 \times 3 = \underline{0}$

$0 \times 4 = \underline{0}$

$0 \times 5 = \underline{0}$

$1 \times 3 = \underline{3}$

$1 \times 4 = \underline{4}$

$1 \times 5 = \underline{5}$

$2 \times 3 = \underline{6}$

$2 \times 4 = \underline{8}$

$2 \times 5 = \underline{10}$

$3 \times 3 = \underline{9}$

$3 \times 4 = \underline{12}$

$3 \times 5 = \underline{15}$

$4 \times 3 = \underline{12}$

$4 \times 4 = \underline{16}$

$4 \times 5 = \underline{20}$

$5 \times 3 = \underline{15}$

$5 \times 4 = \underline{20}$

$5 \times 5 = \underline{25}$

Write the answers.

$$3 \times 2 = \underline{6}$$

$$3 \times 4 = \underline{12}$$

$$4 \times 1 = \underline{4}$$

$$2 \times 4 = \underline{8}$$

$$5 \times 5 = \underline{25}$$

$$1 \times 1 = \underline{1}$$

$$5 \times 3 = \underline{15}$$

$$4 \times 2 = \underline{8}$$

$$2 \times 5 = \underline{10}$$

$$5 \times 4 = \underline{20}$$



Write the answers.

$$4 \times 4 = \underline{16}$$

$$5 \times 1 = \underline{5}$$

$$2 \times 3 = \underline{6}$$

$$3 \times 3 = \underline{9}$$

$$4 \times 3 = \underline{12}$$

$$4 \times 5 = \underline{20}$$

$$2 \times 2 = \underline{4}$$

$$3 \times 5 = \underline{15}$$

$$5 \times 2 = \underline{10}$$

$$3 \times 1 = \underline{3}$$

For extra practice, do Page 9.

Write the answers.

$$\begin{array}{r} 1 \\ \times 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 0 \\ \times 4 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 5 \\ \times 1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 4 \\ \times 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 2 \\ \times 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 0 \\ \times 3 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 6 \\ \times 1 \\ \hline 6 \end{array}$$

Write the answers.

$$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 0 \\ \times 10 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 9 \\ \times 2 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline 28 \end{array}$$

$$\begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 7 \\ \times 1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ \times 0 \\ \hline 0 \end{array}$$

Write the answers.

$$\begin{array}{r} 8 \\ \times 6 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 0 \\ \times 9 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 7 \\ \times 6 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline 49 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 5 \\ \times 10 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 8 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 10 \\ \times 2 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 10 \\ \times 1 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 10 \\ \times 0 \\ \hline 0 \end{array}$$

For extra practice do Page 10.

CET I

Multiply.

3	2	9	7	4
<u>x 4</u>	<u>x 5</u>	<u>x 3</u>	<u>x 2</u>	<u>x 4</u>
_____	_____	_____	_____	_____

8	6	9	7	5
<u>x 2</u>	<u>x 5</u>	<u>x 4</u>	<u>x 3</u>	<u>x 3</u>
_____	_____	_____	_____	_____

8	7	3	2	6
<u>x 5</u>	<u>x 4</u>	<u>x 2</u>	<u>x 4</u>	<u>x 3</u>
_____	_____	_____	_____	_____

4 x 8 = \_\_\_\_\_

5 x 7 = \_\_\_\_\_

3 x 5 = \_\_\_\_\_

4 x 5 = \_\_\_\_\_

2 x 6 = \_\_\_\_\_

3 x 3 = \_\_\_\_\_

C I R C L E C O R R E C T X O S	TL. PTS.	
	21	100%
C I R C L E C O R R E C T X O S	NO. OF PTS.	%
	20	95
	19	90
	18	86
	17	81
	16	76
	15	71
	14	67
	13	62
	12	57
	11	52
	10	48
	9	43
	8	38
	7	33
	6	29
	5	24
	4	19
	3	14
	2	10
	1	5

Fill in the blank to make a true number sentence.

□ □

□ □

□ □

3 x \_\_\_\_\_ = 12

□ □

□ □

□ □

◇ ◇ ◇ ◇  
◇

◇ ◇ ◇ ◇  
◇

\_\_\_\_\_ x 5 = 10

C I R C L E C O R R E C T X O S	TL. PTS.	
	2	100%
C I R C L E C O R R E C T X O S	NO. OF PTS.	%
	1	50

Write the correct answers.

$$5 \times 4 = \underline{20}$$

$$5 \times 5 = \underline{25}$$

$$2 \times 3 = \underline{6}$$

$$3 \times 3 = \underline{9}$$

$$3 \times 4 = \underline{12}$$

$$4 \times 2 = \underline{8}$$

$$2 \times 1 = \underline{2}$$

$$5 \times 3 = \underline{15}$$

$$4 \times 4 = \underline{16}$$

$$1 \times 1 = \underline{1}$$

Write the answers.

$$\begin{array}{r} 0 \\ \times 10 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 6 \\ \times 8 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 2 \\ \times 10 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 6 \\ \times 6 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 5 \\ \times 4 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 3 \\ \times 6 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 5 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 4 \\ \times 10 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 3 \\ \times 7 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

CET II

Multiply.

$\begin{array}{r} 6 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ \times 3 \\ \hline \end{array}$
_____	_____	_____	_____	_____
$\begin{array}{r} 7 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 4 \\ \hline \end{array}$	$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 9 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 4 \\ \hline \end{array}$
_____	_____	_____	_____	_____
$\begin{array}{r} 7 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$	$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 7 \\ \times 3 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$
_____	_____	_____	_____	_____

$5 \times 8 = \underline{\hspace{2cm}}$	$4 \times 3 = \underline{\hspace{2cm}}$
$5 \times 4 = \underline{\hspace{2cm}}$	$3 \times 8 = \underline{\hspace{2cm}}$
$2 \times 9 = \underline{\hspace{2cm}}$	$4 \times 4 = \underline{\hspace{2cm}}$

Put the correct numeral in the blank.

$\begin{array}{c} \text{Hexagon} \quad \text{Hexagon} \quad \text{Hexagon} \\ \text{Hexagon} \quad \text{Hexagon} \quad \text{Hexagon} \end{array}$
$\underline{\hspace{2cm}} \times 3 = 9$

$\begin{array}{c} \text{Circle} \quad \text{Circle} \quad \text{Circle} \quad \text{Circle} \\ \text{Circle} \quad \text{Circle} \quad \text{Circle} \end{array}$
$2 \times \underline{\hspace{2cm}} = 14$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	21	100%
	NO. OF PTS.	%
	20	95
	19	90
	18	85
	17	81
	16	76
	15	71
	14	67
	13	62
	12	57
	11	52
	10	48
	9	43
	8	38
	7	33
	6	29
	5	24
	4	19
	3	14
	2	10
	1	5

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	2	100%
	NO. OF PTS.	%
	1	50



**OBJECTIVE:** Finds products to demonstrate oral and written mastery of multiplication (without pictures). Factors of 2, 3, 4, and 5 tables.

**STANDARD TEACHING SEQUENCE**

<b>Page</b>	<b>Supplementary Material</b>
1. Multiplies horizontally with products to 10.	
2. Multiplies horizontally with products to 25.	
3. Multiplies horizontally with products to 25.	
4. Multiplies horizontally with products to 20.	9
5. Multiplies factors vertically with products to 25.	
6. Multiplies vertically with products to 40.	
7. Multiplies vertically with products to 50.	10
8. CET I.	
CET II.	11

Circle pages that are to be done.

Standard Teaching Sequence, Con't.

1967 - 68

Sequence No. Prescription No.

12R	Solves multiplication problems using 3 as a factor. Uses repeated addition in part A but not B.
13R	Writes 3's multiplication facts. Answers 3's multiplication facts orally within decreasing time limits.
14R	Solves problems using 4 as a factor. Uses repeated addition to answer multiplication problems in Part A.
15R	Writes the 4's multiplication table up to 10. Answers 4's multiplication facts orally within decreasing time limits.
16R	Solves problems using 5 as a factor. Uses repeated addition for help in Part A but not Part B.
17R	Writes the 5's multiplication facts up to 10. Answers 5's multiplication facts orally within decreasing time limits.
18R	Timed test. Writes answers to multiplication facts from the 1 - 5 multiplication tables.
19R	

Teaching Aids:

Assorted flashcards  
 Multo Game  
 Dominoes  
 Imma Whiz Game  
 Assorted Counting Aids - abacus, beads, sticks

Textbook Resources:

Book	Teaching Pages	Practice Pages
Harcourt, Brace & World, 1966 <u>Elementary Mathematics</u> - 3		191, 252

## Math Script

Objective: D-Mult-4-12R

Purpose: Oral and written work for introducing or reinforcing the 3's multiplication table. Uses repeated addition to solve multiplication problems.

Note to Recorder: Emphasize underlined words.

Title: Multiplication Facts: 3's Table

Hi - how are you today? (pause) Let's have a contest. Pretend that someone put 3 cases of matchbox cars with 7 cars in each case on your desk. That is 3 groups of 7. I bet I can tell how many cars there are altogether before you can! Go - (3 second pause) There are 21 matchbox cars altogether. I knew that answer right away because when I was in D-Multiplication I studied my multiplication facts real well! 3 groups of 7 is the multiplication fact: 3 times 7 equals 21. On this tape you are going to study the 3's multiplication facts. After you practice them for a while you will be able to do them quickly and maybe win some arithmetic contests yourself!

Put your name, room and the date at the top of your workpage. BELL When you do the 3's multiplication facts you are really adding a number 3 times. Put your finger on the first problem in Part A. (pause) It is 3 times 1. Now move your finger across the page to the addition problem. You know the sum of 1 plus 1 plus 1. What is it? (pause) 3. Write a 3 in the space. BELL A shorter way of adding one - 3 times is to multiply 3 times 1. Move your finger back to the multiplication problem. 3 times 1 is just a shorter way of adding one - 3 times, so 3 times 1 equals 3. Write a 3 in the space. BELL 3 times 1 equals 3.

Look at problem number 2. You can find out what 3 times 2 equals by adding two - 3 times. What does 2 plus 2 plus 2 equal? (pause) 6.

KE

Write a 6 in the blank beside the addition problem. BELL  $2 + 2 + 2$  equals 6 so 3 times 2 equals 6 also. Write the answer on the space after  $3 \times 2$ . BELL

For the rest of Part A, look at the multiplication problem but solve the addition problem first, because you already know repeated addition. Then you can answer the multiplication problems.

I'll do number 3 with you. 3 times 3 is a short way of adding three - 3 times. 3 plus 3 plus 3 equals what? (pause) 9. So, 3 times 3 equals 9 also. Fill in the blanks and do the rest of Part A in the same way. BELL

Let's check Part A starting at number 4 where I left you.  $4 + 4 + 4 = 12$  so,  $3 \times 4 = 12$ . (pause)  $5 + 5 + 5 = 15$ , so  $3 \times 5 = 15$  too. (pause)  $6 + 6 + 6 = 18$ , so  $3 \times 6 = 18$ . (pause)  $7 + 7 + 7 = 21$ , so  $3 \times 7 = 21$  also. (pause)  $8 + 8 + 8 = 24$ , so  $3 \times 8 = 24$ . (pause)  $9 + 9 + 9 = 27$ , so  $3 \times 9 = 27$ . (pause)  $10 + 10 + 10 = 30$ , so  $3 \times 10 = 30$ . (pause)

Now put your hand over the addition problems. I am going to say each of the 3's multiplication facts and you repeat after me. Look at the fact as you say it out loud. 3 times 1 equals 3. (long pause) 3 times 2 equals 6. (long pause)  $3 \times 3 = \underline{9}$ . (long pause)  $3 \times 5 = \underline{15}$  (long pause)  $3 \times 6 = \underline{18}$ . (long pause)  $3 \times 7 = \underline{21}$ . (long pause)  $3 \times 8 = \underline{24}$ . (long pause)  $3 \times 9 = \underline{27}$ . (long pause)  $3 \times 10 = \underline{30}$ . (long pause)

Do the problems in Part B without changing them into addition problems. Use Part A if you need help. BELL

Now you know what the 3's multiplication table is - all you need is a lot of practice. Practice is the most important part. So, if someone ever says "There are 3 cases of matchbox cars with 7 cars in each case. How many matchbox cars are there altogether?" Right away

you'll be able to say "21" because you know that 3 times 7 equals 21.  
Then you'll be a champ!

Put this disc in its proper place and take your workpage to an  
Aide. So long! BELL

Objective: D-Mult-4-13R

Purpose: To give child oral practice (drill) in the 3's multiplication table. Repeated addition is not used. Exercises are timed with decreasing time limits. The child should have had tape D-Mult-4-12R first.

Notes to Recorder: Emphasize underlined words. Note that pauses are timed from middle of script to end.

Title: Multiplication Drill of the 3's Table

Hello - how are you today? (pause) On this disc you are going to practice the 3's multiplication facts. It is very important that you learn to answer the problems as fast as possible. Later on you will be able to figure out how many matchbox cars you have and still have loads of time to play with them. Or figure out how many cookies are in a package and still have time to eat your share of them. So work hard at this tape and the other ones like it and you'll have lots of time by knowing your multiplication facts.

First let's review the 3's multiplication facts. Write each problem on your worksheet as I say it, then write the answer. 3 times 1 equals -- trace over 3 times 1 equals. BELL Answer? (pause) 3. 3 times 2 equals. BELL  $3 \times 2 = \underline{6}$ .  $3 \times 4 =$  BELL  $3 \times 4 = \underline{12}$   $3 \times 5 =$  BELL  $3 \times 5 = \underline{15}$   $3 \times 6 =$  BELL  $3 \times 6 = \underline{18}$   $3 \times 7 =$  BELL  $3 \times 7 = \underline{21}$   $3 \times 8 =$  BELL  $3 \times 8 = \underline{24}$   $3 \times 9 =$  BELL  $3 \times 9 = \underline{27}$   $3 \times 10 =$  BELL  $3 \times 10 = \underline{30}$ .

Turn your workpage over (long pause). We are going to play a game. I will say a 3's multiplication fact and you will have time to say the answer out loud. Try to say the answer before I do. I will go slowly and you will have lots of time to answer the first couple problems. Let's try some. 3 x 3 equals (10 sec. pause) 9. 3 x 10 equals (10 sec. pause) 30. Here's a harder one: 3 x 9 equals (10 sec. pause) How are you doing? (pause) You have 2 choices

KF

now: you can either turn your workpage over and study the facts some more, or keep the tape on and say the answers a little bit faster because the game is speeding up. BELL Make sure the workpage is turned over. Here we go!  $3 \times 5$  equals (8 sec. pause) 15.  $3 \times 7$  equals (8 sec. pause) 21.  $3 \times 1$  = (8 sec. pause) 3.  $3 \times 6$  equals (8 sec. pause) 18.  $3 \times 3$  = (8 sec. pause) 9.  $3 \times 8$  equals (8 sec. pause) 24.  $3 \times 4$  equals (8 sec. pause) 12.

Now we are going to go even faster. If you haven't been answering quickly enough start the tape over and go through the drills again. BELL I hope you are ready for the next drill. Just listen. (4 sec. pause) That is how much time you will have to say each answer out loud. That's a lot of time when you think about it, but you have to know your multiplication facts. Keep cool; answer quickly and correctly. Let's go --  $3 \times 2$  equals (4 sec. pause) 6.  $3 \times 9$  equals (4 sec. pause) 27.  $3 \times 4$  equals (4 sec. pause) 12.  $3 \times 6$  equals (4 sec. pause) 18.  $3 \times 3$  equals (4 sec. pause) 9.  $3 \times 7$  equals (4 sec. pause) 21.  $3 \times 10$  equals (4 sec. pause) 30.  $3 \times 5$  equals (4 sec. pause) 15.  $3 \times 1$  equals (4 sec. pause) 3.  $3 \times 8$  equals (4 sec. pause) 24. Can you go faster?  $3 \times 9$  equals (3 sec. pause) 27.  $3 \times 4$  equals (3 sec. apuse) 12.  $3 \times 6$  equals (3 sec. pause) 18.  $3 \times 3$  equals (3 sec. pause) 9.  $3 \times 7$  equals (3 sec. pause) 21.  $3 \times 10$  equals (3 sec. Pause) 30.  $3 \times 5$  equals (3 sec. nause) 15.  $3 \times 1$  equals (3 sec. pause) 3.  $3 \times 8$  equals (3 sec. pause) 24.  $3 \times 2$  equals (3 sec. pause) 6. Wow! That was hard work!

The faster you can answer these multiplication facts the faster you will be able to solve problems using them. Come back again and use this tape whenever you want to practice the 3's multiplication table. Put this disc away and take your workpage to the teacher Good-bye. BELL



## Math Script

Objective: D-Mult-4-14R

Purpose: To give an oral approach to studying the 4's multiplication table. It may be an introduction or for extra practice.

Notes to Recorder: Emphasize underlined words.

Title: Multiplication Facts: 4's Table

Hello! Let's pretend you are the popsicle-man for a few minutes. When you stop your truck, 4 little children each give you 7 cents for a popsicle. After you give them the popsicles, you count all the money the children gave you. 7 cents plus 7 cents plus 7 cents plus 7 cents equals how much? (pause) 28 cents.

The real popsicle man does this much faster because he uses the multiplication facts. He says to himself: "4 children gave me 7 cents each. I have 4 groups of 7. So this is the multiplication fact 4 times 7. I know 4 times 7 equals 28, so I have 28 cents." The popsicle man learned the tables of multiplication when he was your age. Today you are going to study the 4's multiplication table.

Write your name, room and date at the top of the workpage. BELL You already know how to add the same number a couple of times. Multiplication is a short way of adding the same number over and over again.

Look at problem number 1 in Part A. Write the sum of 1 plus 1 plus 1 plus 1. BELL The sum is 4. Now move your pencil to the right. (pause) 4 times 1 is the multiplication fact that is the same as adding 1 - four times. What is the answer to the problem? (pause) 4. Write it down. BELL Look at problem number 2. Add 2 four times and write your answer. BELL 2 added 4 times equals 8. In multiplication this is the fact 4 times 2. You already answered the longer form of this

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problem. Write the answer to 4 times 2. BELL 4 times 2 equals 8.  
Do the rest of Part A. Solve the addition problem first to help you  
answer each multiplication fact. BELL

Let's check your answers starting with number 3: 3 plus 3 plus  
3 plus 3 equals 12; 4 times 3 equals 12. Number 4:  $4 + 4 + 4 + 4 = 16$ ,  
 $4 \times 4 = 16$ . Number 5:  $5 + 5 + 5 + 5 = 20$ ;  $4 \times 5 = 20$ . Number 6:  
 $6 + 6 + 6 + 6 = 24$ ;  $4 \times 6 = 24$ . Number 7:  $7 + 7 + 7 + 7 = 28$ ;  $4 \times 7 = 28$ .  
Number 8:  $8 + 8 + 8 + 8 = 32$ ;  $4 \times 8 = 32$ . Number 9:  $9 + 9 + 9 + 9 = 36$ ,  
 $4 \times 9 = 36$ . Number 10:  $10 + 10 + 10 + 10 = 40$ ;  $4 \times 10 = 40$ . Put your  
pencil down and study the problems for a few minutes then turn me back  
on. BELL

Do Part B now, without changing the multiplication problems into  
addition problems. Try to do these problems as fast as you can to see  
how well you have learned the 4's multiplication facts. BELL Now you  
are finished. Be sure your name, room and the date are on the workpage  
and take it to an Aide. Put this disc back in its proper place.

So long! BELL

15

## Math Script

Objective: D-Mult-4-15R

Purpose: To give child oral practice (drill) in the 4's multiplication table. Repeated addition is not used. Exercises are timed with decreasing time limits. The child should have had D-Mult-4-14R first.

Note to Recorder: Emphasize underlined words. Note that pauses are timed.

Title: Multiplication Drill for the 4's Table

Hi there! Put your name, room and the date on the top of your workpage. BELL Today we are going to practice the 4's multiplication facts so that you can answer the problems in a snap. First, let's review the 4's multiplication facts. Write each problem on your workpage as I say it, then write the answer. 4 times 1 equals - trace over the 4 times 1 equals BELL Answer? (pause) 4. 4 times 2 equals BELL 8. Next problem: 4 times 3 equals BELL 12. 4 times 4 equals BELL 16. 4 times 5 equals BELL 20. Next problem:  $4 \times 6 =$  BELL 24. 4 times 7 equals BELL 28.  $4 \times 8 =$  BELL 32.  $4 \times 9$  equals BELL 36. 4 times 10 equals BELL 40.

Turn your workpage over. (long pause) We are going to play a game. I will say a 4's multiplication fact and you will have time to say the answer out loud. Try to say the answer before I do. I will go slowly and you will have lots of time for the first couple of problems. Let's try some. 4 times 3 equals (10 sec. pause) 12.  $4 \times 10 =$  (10 sec. pause) 40. Here's a harder one, 4 times 7 equals (10 sec. pause) 28. How are you doing? (pause) You have 2 choices now: you can turn your workpage over and study the facts some more or else you can keep the game on and say the answers a little faster because the game is speeding up. BELL Make sure your workpage is turned over. Here we go:  $4 \times 5 =$  (8 sec. pause) 20.  $4 \times 6 =$  (8 sec. pause) 36.  $4 \times 1 =$  (8 sec. pause) 4.

4 x 6 = (8 sec. pause) 24. 4 x 4 = (8 sec. pause) 16. 4 x 8 = (8 sec. pause) 32. 4 x 3 = (8 sec. pause) 12.

Now we are going to go even faster. If you haven't been answering quickly enough start the tape over and go through the drills again. BELL I hope you are ready for the next drill. Keep cool and answer quickly and correctly. Just listen (4 sec. pause) That is how much time you will now have to say each answer out loud. That's a lot of time when you think about it but you have to know your multiplication facts. Let's go --- 4 times 1 equals (4 sec. pause) 4. 4 x 7 = (4 sec. pause) 28. 4 x 4 = (4 sec. pause) 16. 4 x 9 = (4 sec. pause) 36. 4 x 6 = (4 sec. pause) 24. 4 x 3 = (4 sec. pause) 12. 4 x 8 = (4 sec. pause) 32. 4 x 2 = (4 sec. pause) 8. 4 x 5 = (4 sec. pause) 20. 4 x 10 = (4 sec. pause) 40. Can you go faster? 4 x 7 = (3 sec. pause) 28. 4 x 4 = (3 sec. pause) 16. 4 x 9 = (3 sec. pause) 36. 4 x 1 = (3 sec. pause) 4. 4 x 5 = (3 sec. pause) 20. 4 x 2 = (3 sec. pause) 8. 4 x 10 = (3 sec. pause) 40. 4 x 3 = (3 sec. pause) 12. 4 x 6 = (3 sec. pause) 24. 4 x 8 = (3 sec. pause) 32.

Wow! That was hard work!

The faster you can answer these multiplication facts the faster you will be able to solve problems using them. Come back again and use this tape whenever you want to practice the 4's multiplication table. Put this disc away and take your paper to your teacher. BELL

Objective: D-Mult-4-17R

Purpose: To give child oral practice (drill) in the 5's multiplication table. Repeated addition is not used. Exercises are timed with decreasing time limits. The child should have had disc D-Mult-4-16R first.

Notes to Recorder: Emphasize underlined words. Note that pauses are timed from middle of script to end.

Title: Multiplication Drill of the 5's Table

Hi! On this tape you are going to practice the 5's multiplication facts. Let's review the facts. Put your name, room and the date on the top of your workpage. BELL Write each problem on your worksheet as I say it and write the answer. 5 times 1 equals -- trace over the 5 times 1 equals. BELL Answer? (pause) 5. 5 x 2 = BELL 5 x 2 = 10. 5 x 3 = BELL 5 x 3 = 15. 5 x 4 = BELL 5 x 4 = 20. 5 x 5 = BELL 5 x 5 = 25. 5 x 6 = BELL 5 x 6 = 30. 5 x 7 = BELL 5 x 7 = 35. 5 x 8 = BELL 5 x 8 = 40. 5 x 9 = BELL 5 x 9 = 45. 5 x 10 = BELL 5 x 10 = 50.

Turn your workpage over (long pause). We are going to play a game. I will say a 5's multiplication fact and you will have time to say the answer out loud. Try to say the answer before I do. I will go slowly and you will have lots of time to answer the first couple of problems. Let's try some. 5 times 3 equals (10 sec. pause) 15. 5 x 10 = (10 sec. pause) 50. 5 x 7 = (10 sec. pause) 35. How are you doing? (pause) You now have 2 choices: you can either turn the workpage over and study the facts more or keep the tape on and say the answers a little faster because this game is speeding up. BELL Make sure your workpage is turned over Ready? Set? Here we go. 5 times 5 equals (8 sec. pause) 25. 5 x 6 = (8 sec. pause) 30. 5 x 4 = (8 sec. pause) 20. 5 x 8 = (8 sec. pause) 40. 5 x 9 = (8 sec. pause) 45. 5 x 10 = (8 sec. pause) 50.

(8 sec. pause) 20.  $5 \times 8 =$  (8 sec. pause) 40.  $5 \times 3 =$  (8 sec. pause) 15..

Now we are going to go even faster. If you haven't been answering all of the problems start the tape over and go through the drills again. BELL I hope you are ready for the next drill. Just listen -- (4 sec. pause) -- that is how much time you will have to say each answer out loud. It's a lot of time when you think about it, but you have to know your multiplication facts. Don't lose your cool. Just answer quickly and correctly. Here we go -- 5 times 1 equals (4 sec. pause) 5.  $5 \times 7 =$  (4 sec. pause) 35.  $5 \times 4 =$  (4 sec. pause) 20.  $5 \times 9 =$  (4 sec. pause) 45.  $5 \times 6 =$  (4 sec. pause) 30.  $5 \times 3 =$  (4 sec. pause) 15.  $5 \times 8 =$  (4 sec. pause) 40.  $5 \times 2 =$  (4 sec. pause) 10.  $5 \times 5 =$  (4 sec. pause) 25.  $5 \times 10 =$  (4 sec. pause) 50. Can you go faster?  $5 \times 4 =$  (3 sec. pause) 20.  $5 \times 7 =$  (3 sec. pause) 35.  $5 \times 1 =$  (3 sec. pause) 5.  $5 \times 9 =$  (3 sec. pause) 45.  $5 \times 6 =$  (3 sec. pause) 30.  $5 \times 3 =$  (3 sec. pause) 15.  $5 \times 8 =$  (3 sec. pause) 40.  $5 \times 2 =$  (3 sec. pause) 10.  $5 \times 5 =$  (3 sec. pause) 25.  $5 \times 10 =$  (3 sec. pause) 50. Wow! That was some fast thinking!

The faster you can answer these multiplication facts the faster you can solve problems with the facts. Come back again and use this tape whenever you want to practice the 5's multiplication table. Put this disc away and take the workpage to your teacher. So long. BELL

These are the 5 skill sheets completed by Susan and corrected by the Aide.

Record (in role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets:

Susan can: Complete multiplication equations using factors 0-3.

Susan cannot: Use factors 4-5 to solve multiplication equations with consistent accuracy.

Describe how Susan worked with the prescription: Susan enjoyed using the discs; although she was working on difficult material, she completed the work independently.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Revise original prescription  
☒ Extend the prescription  
☐ Assign a CET for Skill # \_\_\_\_.

Why? Susan's performance on this prescription indicates need for extended work with factors of 3-5 in multiplication equations.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 4, in particular) and Susan's work on these materials, she was assigned the following on 3/11:

<u>Page</u>		
14 R	09	Disc on using factor of 4 in multiplication equations.
15 R		Disc on timed practice of 4's multiplication table.
17 R		Disc on timed practice of 5's multiplication table.
5		Additional practice using factors 1-5

Estimate of time needed: 1 class period

Recheck these 4 pages and the 3 disc scripts.

Record these pages and the date on the Prescription Sheet.

## TO THE STUDENT

Can you do these problems? Write your answers in the blanks:

$$4 \times 2 = \underline{\quad}$$

$$3 \times 4 = \underline{\quad}$$

$$\begin{array}{r} 5 \\ \times 1 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \\ \times 9 \\ \hline \end{array}$$

You will practice problems like these in this booklet.

### Answers

8, 12

5, 27

Complete each equation.

$$0 \times 0 = \underline{0}$$

$$0 \times 1 = \underline{0}$$

$$0 \times 2 = \underline{0}$$

$$1 \times 0 = \underline{0}$$

$$1 \times 1 = \underline{1}$$

$$1 \times 2 = \underline{2}$$

$$2 \times 0 = \underline{0}$$

$$2 \times 1 = \underline{2}$$

$$2 \times 2 = \underline{4}$$

$$3 \times 0 = \underline{0}$$

$$3 \times 1 = \underline{3}$$

$$3 \times 2 = \underline{6}$$

$$4 \times 0 = \underline{0}$$

$$4 \times 1 = \underline{4}$$

$$4 \times 2 = \underline{8}$$

$$5 \times 0 = \underline{0}$$

$$5 \times 1 = \underline{5}$$

$$5 \times 2 = \underline{10}$$



Complete each equation.

$0 \times 3 = \underline{0}$

$0 \times 4 = \underline{0}$

$0 \times 5 = \underline{0}$

$1 \times 3 = \underline{3}$

$1 \times 4 = \underline{4}$

$1 \times 5 = \underline{5}$

$2 \times 3 = \underline{6}$

$2 \times 4 = \underline{8}$

$2 \times 5 = \underline{10}$

$3 \times 3 = \underline{9}$

$3 \times 4 = \underline{12}$

$3 \times 5 = \underline{15}$

$4 \times 3 = \underline{12}$

$4 \times 4 = \underline{\quad} \times$

$4 \times 5 = \underline{\quad} \times$

$5 \times 3 = \underline{\quad} \times$

$5 \times 4 = \underline{\quad} \times$

$5 \times 5 = \underline{\quad} \times$

Write the answers.

$$3 \times 2 = \underline{6}$$

$$3 \times 4 = \underline{12}$$

$$4 \times 1 = \underline{4}$$

$$2 \times 4 = \underline{8}$$

$$5 \times 5 = \underline{\quad} \times$$

$$1 \times 1 = \underline{1}$$

$$5 \times 3 = \underline{15}$$

$$4 \times 2 = \underline{8}$$

$$2 \times 5 = \underline{10}$$

$$5 \times 4 = \underline{\quad} \times$$

Get disc. D-Mult-4-12R

A. (1) $3 \times 1 = \underline{3}$	$1 + 1 + 1 = \underline{3}$
(2) $3 \times 2 = \underline{6}$	$2 + 2 + 2 = \underline{6}$
(3) $3 \times 3 = \underline{9}$	$3 + 3 + 3 = \underline{9}$
(4) $3 \times 4 = \underline{12}$	$4 + 4 + 4 = \underline{12}$
(5) $3 \times 5 = \underline{15}$	$5 + 5 + 5 = \underline{15}$
(6) $3 \times 6 = \underline{18}$	$6 + 6 + 6 = \underline{18}$
(7) $3 \times 7 = \underline{21}$	$7 + 7 + 7 = \underline{21}$
(8) $3 \times 8 = \underline{24}$	$8 + 8 + 8 = \underline{24}$
(9) $3 \times 9 = \underline{27}$	$9 + 9 + 9 = \underline{27}$
(10) $3 \times 10 = \underline{30}$	$10 + 10 + 10 = \underline{30}$

$\begin{array}{r} 4 \\ \times 3 \\ \hline 12 \end{array}$	$\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$	$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$	$\begin{array}{r} 0 \\ \times 3 \\ \hline 0 \end{array}$
$3 \times 8 = \underline{24}$	$3 \times 6 = \underline{18}$	$3 \times 3 = \underline{9}$	
$\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$	$\begin{array}{r} 1 \\ \times 3 \\ \hline 3 \end{array}$	$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$	$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$

Name \_\_\_\_\_ Date \_\_\_\_\_ Room 

10	10
----	----

Get disc D-Mult-4-13R.

$$3 \times 1 = 3$$

$$3 \times 2 = 6$$

$$3 \times 3 = 9$$

$$3 \times 4 = 12$$

$$3 \times 5 = 15$$

$$3 \times 6 = 18$$

$$3 \times 7 = 21$$

$$3 \times 8 = 24$$

$$3 \times 9 = 27$$

$$3 \times 10 = 30$$

D-Mult-4

These are the 4 skill sheets completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets.

Susan can: Complete multiplication equations using factors of 4-5.

Susan cannot: Use factors to solve multiplication equations with consistent accuracy.

Describe how Susan worked with the prescription: Susan gained more independence working with the discs and completed her work without soliciting teacher help.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Revise original prescription
- ☒ Extend prescription
- ☐ Assign a CET

Why? Susan makes random errors on multiplication factors of 0-5.  
She needs some further practice with mixed factors.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 4, in particular) and Susan's work on these materials, she was assigned the following on 3/12:

<u>Page</u>	<u>Reason</u>
6	{ Multiplies with factors 0-5 with products to 50.
7	

Estimate of time needed: 20 minutes maximum.

Recheck these two pages.

Record these two pages and the date on the Prescription Sheet.

Set disc C-Mult-4 -14R.

A.

$$(1) \quad 1 + 1 + 1 + 1 = \underline{\hspace{2cm}}$$

$$4 \times 1 = \underline{\hspace{2cm}}$$

$$(2) \quad 2 + 2 + 2 + 2 = \underline{\hspace{2cm}}$$

$$4 \times 2 = \underline{\hspace{2cm}}$$

$$(3) \quad 3 + 3 + 3 + 3 = \underline{\hspace{2cm}}$$

$$4 \times 3 = \underline{\hspace{2cm}}$$

$$(4) \quad 4 + 4 + 4 + 4 = \underline{\hspace{2cm}}$$

$$4 \times 4 = \underline{\hspace{2cm}}$$

$$(5) \quad 5 + 5 + 5 + 5 = \underline{\hspace{2cm}}$$

$$4 \times 5 = \underline{\hspace{2cm}}$$

$$(6) \quad 6 + 6 + 6 + 6 = \underline{\hspace{2cm}}$$

$$4 \times 6 = \underline{\hspace{2cm}}$$

$$(7) \quad 7 + 7 + 7 + 7 = \underline{\hspace{2cm}}$$

$$4 \times 7 = \underline{\hspace{2cm}}$$

$$(8) \quad 8 + 8 + 8 + 8 = \underline{\hspace{2cm}}$$

$$4 \times 8 = \underline{\hspace{2cm}}$$

$$(9) \quad 9 + 9 + 9 + 9 = \underline{\hspace{2cm}}$$

$$4 \times 9 = \underline{\hspace{2cm}}$$

$$(10) \quad 10 + 10 + 10 + 10 = \underline{\hspace{2cm}}$$

$$4 \times 10 = \underline{\hspace{2cm}}$$

B.

$$\begin{array}{r} 10 \\ \times 4 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 9 \\ \times 4 \\ \hline \end{array} \times$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$4 \times 5 = \underline{20}$$

$$4 \times 7 = \underline{28}$$

$$4 \times 2 = \underline{8}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline \end{array} \times$$

$$\begin{array}{r} 6 \\ \times 4 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 1 \\ \times 4 \\ \hline 4 \end{array}$$

(7-67)

D-Mult-4

14R

Name \_\_\_\_\_ Date \_\_\_\_\_ Room \_\_\_\_\_

10 10

Get disc D-Mult-4-15R.

$$4 \times 1 = \underline{\hspace{2cm}}$$

$$4 \times 2 = \underline{8}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

$$4 \times 7 = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

$$\underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{2cm}}$$

all  
C

(2-67)

D-Mult-4-15R

15

Name \_\_\_\_\_ Date \_\_\_\_\_ Room \_\_\_\_\_

10 10

Get disc D-Mult-4-17R

$$5 \times 1 = \underline{\quad}$$

$$5 \times 2 = \underline{10}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} \times \underline{\quad} = \underline{\quad}$$

Mult

17R



Write the answers.

$$\begin{array}{r} 1 \\ \times 1 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 3 \\ \times 5 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 0 \\ \times 4 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 5 \\ \times 1 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 4 \\ \times 1 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array}$$

$$\begin{array}{r} 2 \\ \times 1 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 0 \\ \times 3 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 6 \\ \times 1 \\ \hline 6 \end{array}$$

These are the 2 skill sheets completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets:

Susan can: Complete multiplication equations using factors of 0-5.

Susan cannot: Demonstrate consistent accuracy in solving multiplication equations with mixed factors 0-5.

Describe how Susan worked with the prescription: She completed this work independently and quickly.

Based on your analysis of Susan's work, you decide to: (check one)

       Revise original prescription

       Extend prescription

  X   Assign a CET for Skill   4  

Why? Susan's work on the materials for this skill indicates mastery of Skill 4.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 4, in particular) and Susan's work on these materials, she was assigned the following on 3/12:

Page

Reason

8

CET to test mastery of Skill 4

Estimate of time needed: 15 minutes maximum.

Recheck this CET page.

Record this page and date on the Prescription Sheet.

Write the answers.

$$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 9 \\ \times 3 \\ \hline 27 \end{array}$$

$$\begin{array}{r} 7 \\ \times 2 \\ \hline 14 \end{array}$$

$$\begin{array}{r} 0 \\ \times 10 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 8 \\ \times 5 \\ \hline 40 \end{array}$$

$$\begin{array}{r} 9 \\ \times 2 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline 30 \end{array} \times$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline 34 \end{array} \times$$

$$\begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 6 \\ \times 3 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 7 \\ \times 1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 6 \\ \times 0 \\ \hline 0 \end{array}$$

Write the answers.

$$\begin{array}{r} 8 \\ \times 6 \\ \hline 48 \end{array}$$

$$\begin{array}{r} 0 \\ \times 9 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline 45 \end{array}$$

$$\begin{array}{r} 7 \\ \times 6 \\ \hline 42 \end{array}$$

$$\begin{array}{r} 7 \\ \times 7 \\ \hline \end{array} \times$$

$$\begin{array}{r} 5 \\ \times 5 \\ \hline 25 \end{array}$$

$$\begin{array}{r} 10 \\ \times 5 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 5 \\ \times 10 \\ \hline 50 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 8 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 7 \\ \times 3 \\ \hline 21 \end{array}$$

$$\begin{array}{r} 8 \\ \times 2 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 10 \\ \times 2 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 8 \\ \times 4 \\ \hline 32 \end{array}$$

$$\begin{array}{r} 10 \\ \times 1 \\ \hline 10 \end{array}$$

$$\begin{array}{r} 10 \\ \times 0 \\ \hline 0 \end{array}$$

For extra practice do Page 10.

This is the Skill 4 CET completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the CET.

Susan can: Part I - Use factors 2-5 to solve mixed multiplication equations. Part II - Find missing factors in a multiplication equation when provided with visual clues (sets).

Susan cannot: \_\_\_\_\_  
\_\_\_\_\_

Describe how Susan worked with the prescription: She worked with independence and confidence.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☒ Assign entire CET for Skill # 4.
- ☐ Assign Part II of CET for Skill #     .
- ☐ Write initial prescription for Skill #     .

Why? Pretest score (Skill 5) was 0%; Part II of this CET was above mastery; past performance indicates Susan's mastery of this skill.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 5 in particular) and Susan's work on Part II of CET for Skill 4, she was assigned the following on 3/12 after a brief pupil-teacher conference to discuss the completed Skill 4 CET.

Page

Reason

7P

CET to test mastery of Skill 5.

Estimate of time needed: 20 minutes maximum.

Examine the objective for Skill 5 and recheck this CET (Skill 5 STS booklet).

Record the page and date on the Prescription Sheet.

CET I

Multiply.

3	2	9	7	4
<u>× 4</u>	<u>× 5</u>	<u>× 3</u>	<u>× 2</u>	<u>× 4</u>
<u>12</u>	<u>10</u>	<u>27</u>	<u>14</u>	<u>16</u>

8	6	9	7	5
<u>× 2</u>	<u>× 5</u>	<u>× 4</u>	<u>× 3</u>	<u>× 3</u>
<u>16</u>	<u>30</u>	<u>36</u>	<u>21</u>	<u>15</u>

8	7	3	2	6
<u>× 5</u>	<u>× 4</u>	<u>× 2</u>	<u>× 4</u>	<u>× 3</u>
<u>40</u>	<u>28</u>	<u>6</u>	<u>8</u>	<u>18</u>

4 × 8 = 32

5 × 7 = 35

3 × 5 = 15

4 × 5 = 20

2 × 6 = 12

3 × 3 = 9

Fill in the blank to make a true number sentence.

□ □

□ □

□ □

□ □

□ □

□ □

3 × 4 = 12

◇ ◇ ◇ ◇  
◇

◇ ◇ ◇ ◇  
◇

2 × 5 = 10

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	21	100%
	NO. OF PTS.	%
	20	95
	19	90
	18	86
	17	81
	16	76
	15	71
	14	67
	13	62
	12	57
	11	52
	10	48
	9	43
	8	38
	7	33
	6	29
	5	24
	4	19
	3	14
	2	10
	1	5

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	2	100%
	NO. OF PTS.	%
	1	50

This is the Skill 5 CET completed by Susan and recorded by the Aide.

Record (in the role of the Aide) the scores on the prescription sheet.

Look at Susan's work on the CET.

Susan can: Write multiplication factors to complete equations when pictured sets are provided.

Susan cannot: Complete equations with factors of 3 & 5.

Describe how Susan worked with the prescription: Susan worked with ease and independence.

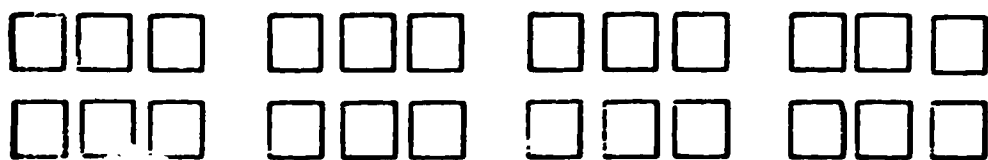
Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for skill # \_\_\_\_.
- ☐ Assign Part II of CET for skill # \_\_\_\_.
- ☒ Write initial prescription for skill # 6.

Why? Pretest score (Skill 6) was 40%; Part II of this CET indicates work needed.

## CET I

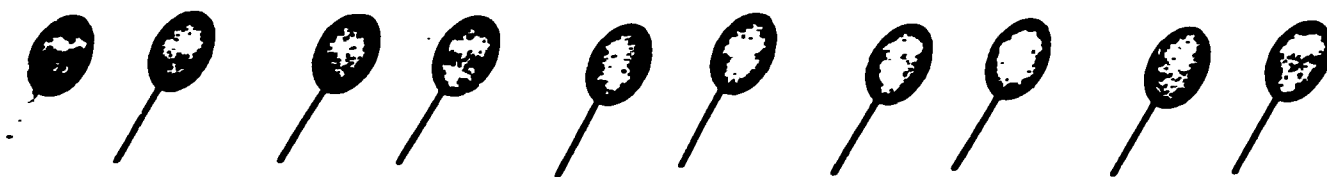
Fill in each blank to make an equation.



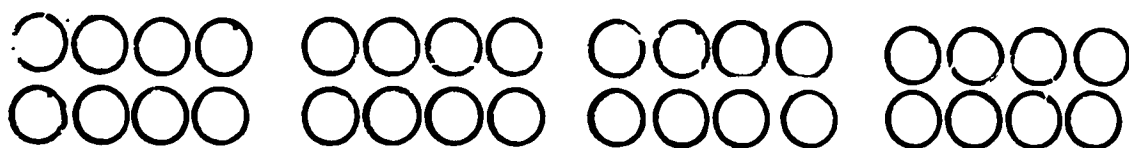
$$\underline{4} \times 6 = 24$$



$$3 \times \underline{8} = 24$$



$$\underline{5} \times 2 = 10$$



$$\underline{4} \times 8 = 32$$

Multiply.

$$2 \times 6 = \underline{12}$$

$$5 \times 3 = \underline{18} \times$$

$$4 \times 7 = \underline{28}$$

$$6 \times 2 = \underline{12}$$

$$3 \times 5 = \underline{18} \times$$

$$7 \times 4 = \underline{28}$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	4	100%
	NO. OF PTS.	%
	3	75
	2	50
	1	25

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	6	100%
	NO. OF PTS.	%
	5	83
	4	67
	3	50
	2	33
	1	17



This is a copy of the STS booklet for Skill 6. Examine all the skill sheets and STS sheets (pp. 14 & 15) in the booklet to become familiar with the materials for this skill.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 6 in particular) and Susan's work on Part II of this CET, she was assigned the following on 3/13:

<u>Page</u>	<u>Reason</u>
Student Page	Introduces skill; previews work
2	Shows multiplication facts by circling sets and supplying product.
4	Writes missing fact to complete equations.
6	Writes commutative equations.
8	Supplies products to commutative equations.

Estimate of time needed: two class periods.

Recheck these five pages.

Record these pages and the date on the Prescription Sheet.

SCHOOL CODE

NAME \_\_\_\_\_

NUMBER \_\_\_\_\_ CLASS \_\_\_\_\_



*individualized program sequence*

**MATHEMATICS**

# Standard Teaching Sequence Booklet

**TEACHER'S EDITION**

**LEVEL D**

**MULTIPLICATION (05)**

**SKILL 6**

Based upon materials developed by The Mathematics Curriculum Staff,  
Learning Research and Development Center, University of Pittsburgh; Joseph  
L. Lipson, Ph.D., Director; Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome D. Kaplan, Ed.D., Teachers College, Columbia University

Appleton-Century-Crofts



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## DEVELOPMENTAL EDITION

## TO THE STUDENT

Circle yes or no.

$$6 \times 4 = 24$$

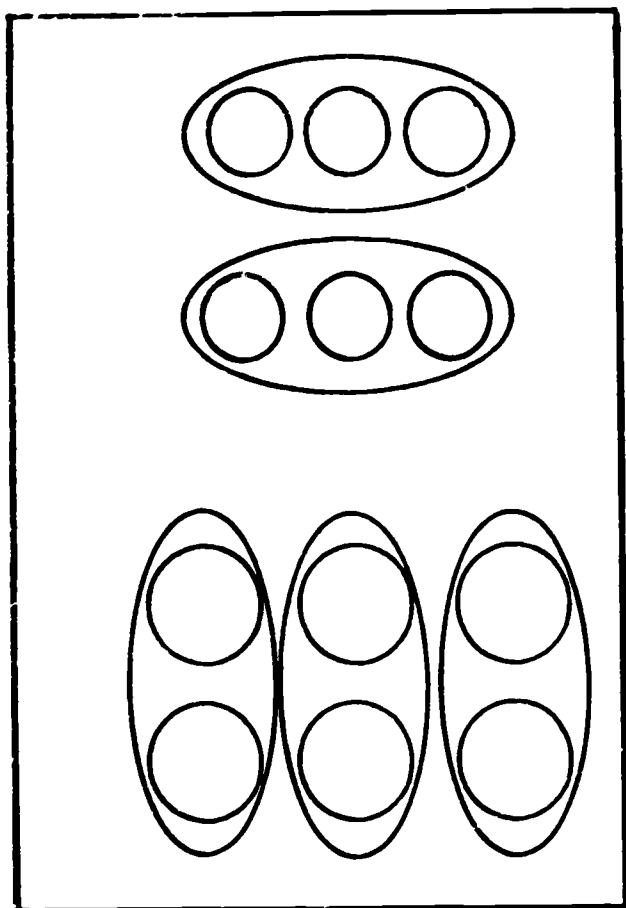
Does  $4 \times 6 = 24$ ? yes  
no

In this booklet you will learn how to answer this question.

Answer

yes

Write in the missing numerals.



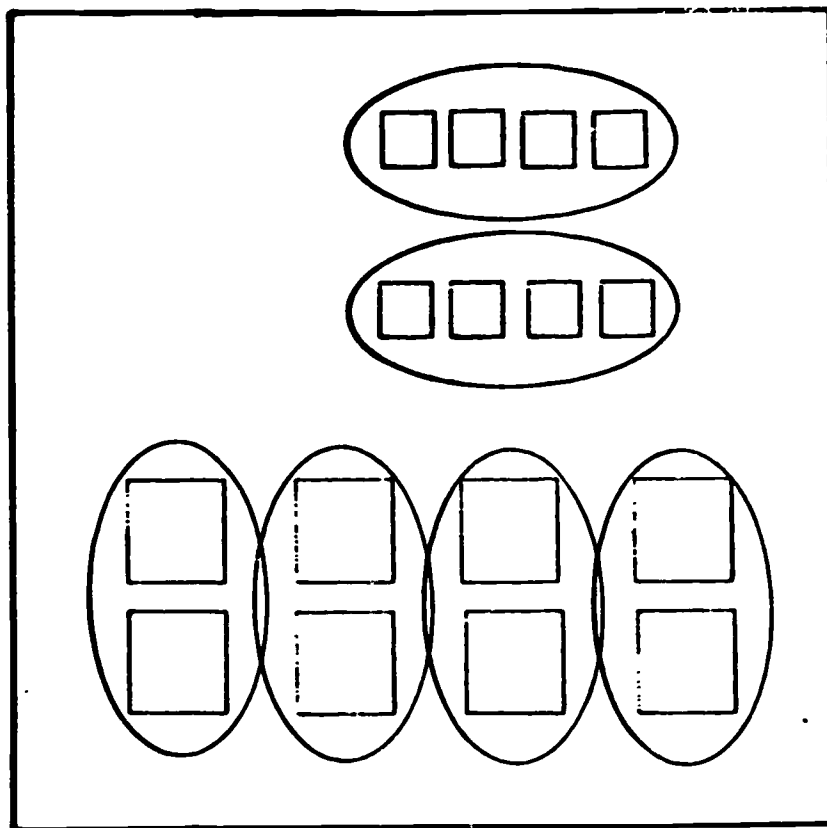
$$2 \times 3 = 6$$

$$\underline{3} \times \underline{2} = \underline{6}$$

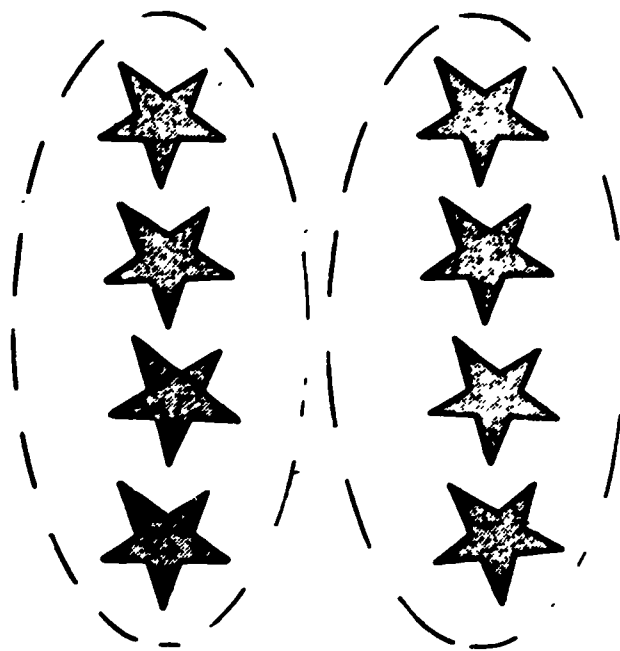
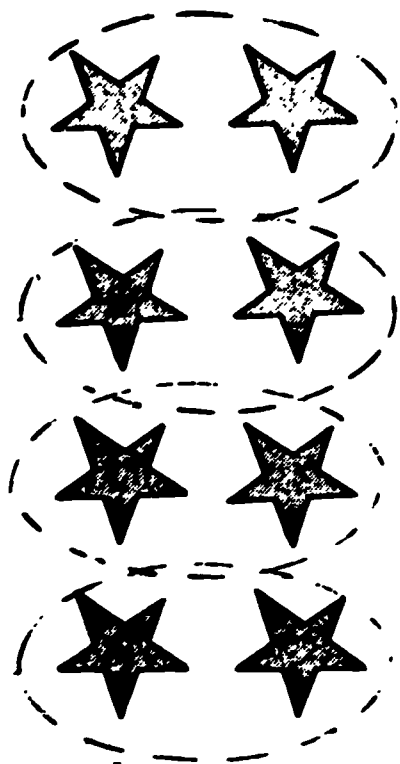
Fill in the missing numerals.

$$\underline{2} \times \underline{4} = \underline{8}$$

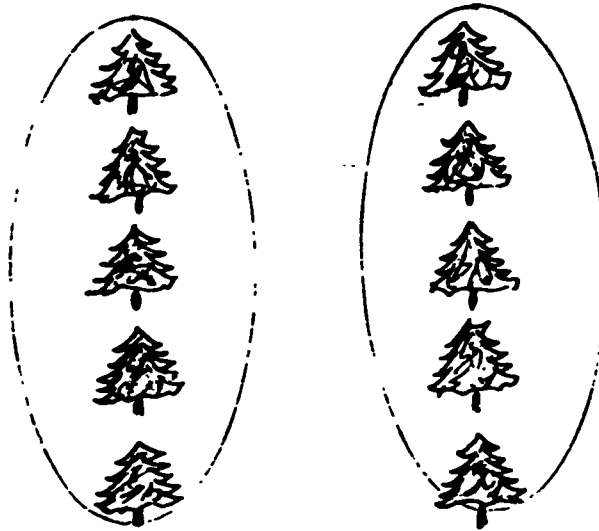
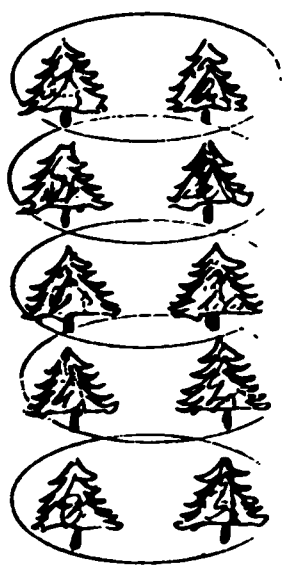
$$\underline{4} \times \underline{2} = \underline{8}$$



Find the answers. Draw a circle around each part of a set.

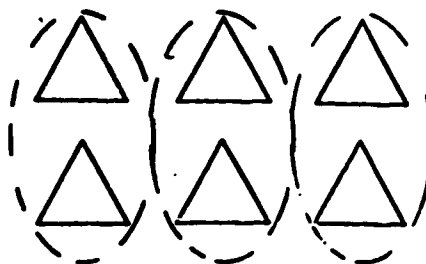
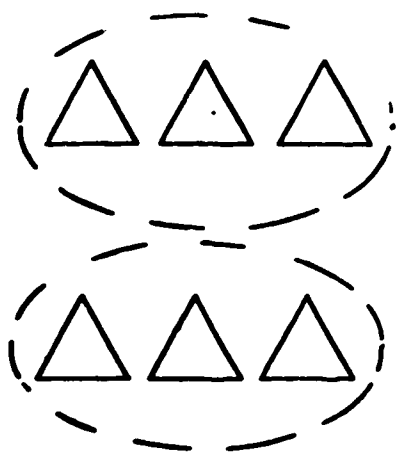


$$4 \times 2 = \underline{8} \longleftrightarrow 2 \times 4 = \underline{8}$$

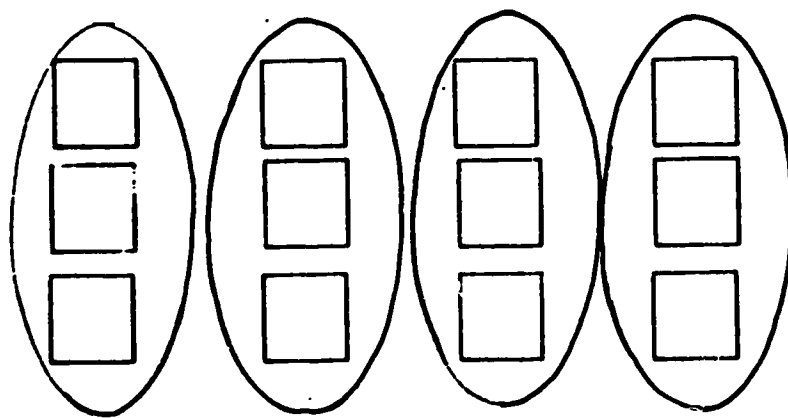
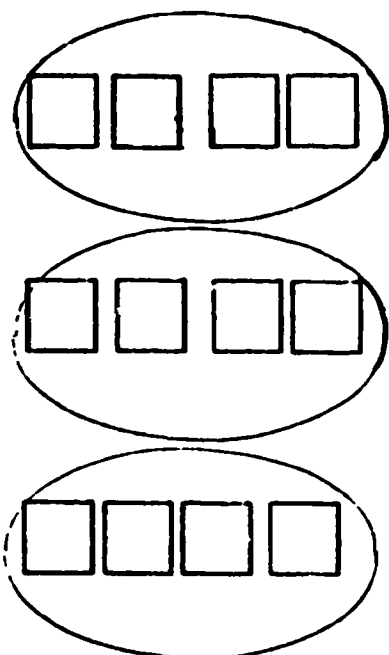


$$5 \times 2 = \underline{10} \longleftrightarrow 2 \times 5 = \underline{10}$$

Find the answers. Draw a circle around each part of a set.



$$2 \times 3 = \underline{6} \quad \longleftrightarrow \quad 3 \times 2 = \underline{6}$$



$$3 \times 4 = \underline{12} \quad \longleftrightarrow \quad 4 \times 3 = \underline{12}$$

Write in the missing numerals.

$4 \times 3 = \underline{3} \times 4$

$\underline{5} \times 4 = 4 \times 5$

$5 \times 1 = \underline{1} \times 5$

$\underline{6} \times 2 = 2 \times 6$

$\underline{7} \times 4 = 4 \times 7$

$6 \times 3 = \underline{3} \times 6$

$3 \times \underline{5} = 5 \times 3$

$9 \times 1 = 1 \times \underline{9}$

$9 \times 3 = \underline{3} \times 9$

$4 \times 7 = \underline{7} \times 4$

$0 \times 3 = 3 \times \underline{0}$

$8 \times 2 = 2 \times \underline{8}$

$8 \times 2 = \underline{2} \times 8$

$6 \times 0 = \underline{0} \times 6$

$3 \times 5 = \underline{5} \times 3$

Write the answers in the blanks.

$$2 \times 3 = \underline{6}$$

$$3 \times 2 = \underline{6}$$

Does  $2 \times 3 = 3 \times 2$ ? yes

Does  $3 \times 2 = 2 \times 3$ ? yes

Remember, the order of the numbers does not affect the answers.

Write in the missing numerals.

$$2 \times 1 = \underline{1} \times \underline{2} = 2$$

$$3 \times 1 = \underline{1} \times \underline{3} = 3$$

$$2 \times 4 = \underline{4} \times \underline{2} = \underline{8}$$

$$3 \times 2 = \underline{2} \times \underline{3} = 6$$



The COMMUTATIVE PRINCIPLE says that the order of the numbers does not affect the answer.

Write in the missing numerals to show the commutative principle.

$$2 \times 5 = \underline{5} \times \underline{2} = 10$$

$$3 \times 4 = \underline{4} \times \underline{3} = \underline{12}$$

$$6 \times 2 = \underline{2} \times \underline{6} = \underline{12}$$

$$3 \times 5 = \underline{5} \times \underline{3} = \underline{15}$$

$$2 \times 7 = \underline{7} \times \underline{2} = \underline{14}$$

$$3 \times 6 = \underline{6} \times \underline{3} = \underline{18}$$

$$2 \times 9 = \underline{9} \times \underline{2} = \underline{18}$$

$$3 \times 7 = \underline{7} \times \underline{3} = \underline{21}$$

For more practice, do Page 10

300

Write in the missing numerals.

$$3 \times 1 = \underline{3}$$

$$1 \times 3 = \underline{3}$$

$$\underline{0} \times 4 = 0$$

$$4 \times \underline{0} = 0$$

$$4 \times \underline{3} = 12$$

$$3 \times \underline{4} = 12$$

$$6 \times \underline{2} = 12$$

$$\underline{2} \times 6 = 12$$

$$2 \times 5 = \underline{10}$$

$$5 \times 2 = \underline{10}$$

$$3 \times 6 = \underline{18}$$

$$6 \times 3 = \underline{18}$$

$$5 \times 9 = \underline{45}$$

$$\underline{9} \times 5 = 45$$

For more practice, do page 11.

Write in the missing numerals.

$$6 \times 0 = \underline{0}$$

$$0 \times 6 = \underline{0}$$

$$4 \times 7 = \underline{28}$$

$$7 \times 4 = \underline{28}$$

$$9 \times \underline{4} = 36$$

$$\underline{4} \times 9 = 36$$

$$5 \times 10 = \underline{50}$$

$$10 \times 5 = \underline{50}$$

$$4 \times \underline{6} = 24$$

$$\underline{6} \times 4 = 24$$

$$8 \times \underline{4} = 32$$

$$\underline{4} \times 8 = 32$$

$$8 \times 3 = \underline{24}$$

$$3 \times 8 = \underline{24}$$

$$4 \times 5 = \underline{20}$$

$$5 \times 4 = \underline{20}$$

$$5 \times \underline{0} = 0$$

$$\underline{0} \times 5 = 0$$

For more practice, do Page 12.

CET I

Multiply.

2 × 7 = \_\_\_\_\_

4 × 10 = \_\_\_\_\_

7 × 2 = \_\_\_\_\_

10 × 4 = \_\_\_\_\_

3 × 6 = \_\_\_\_\_

2 × 8 = \_\_\_\_\_

6 × 3 = \_\_\_\_\_

8 × 2 = \_\_\_\_\_

3 × 9 = \_\_\_\_\_

4 × 3 = \_\_\_\_\_

9 × 3 = \_\_\_\_\_

3 × 4 = \_\_\_\_\_

5  
× 7

7  
× 5

4  
× 9

9  
× 4

5  
× 4

4  
× 5

\_\_\_\_\_

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	18	100%
	NO. OF PTS.	%
	17	94
	16	89
	15	83
	14	78
	13	72
	12	67
	11	61
	10	56
	9	50
	8	44
	7	39
	6	33
	5	28
	4	22
	3	17
	2	11
	1	6

Label the factors and the product on the lines below  
each problem.

4     ×     3     =     12

\_\_\_\_\_

6     ×     5     =     30

\_\_\_\_\_

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	6	100%
	NO. OF PTS.	%
	5	83
	4	67
	3	50
	2	33
	1	17

Write the answers in the blanks, using the commutative principle.

$$4 \times 5 = \underline{5} \times \underline{4}$$

$$0 \times 5 = \underline{5} \times \underline{0}$$

$$2 \times 6 = \underline{6} \times \underline{2}$$

$$3 \times 7 = \underline{7} \times \underline{3}$$

$$\underline{4} \times \underline{2} = 2 \times 4 = 8$$

$$3 \times 5 = \underline{5} \times \underline{3} = \underline{15}$$

$$6 \times 1 = \underline{1} \times 6$$

$$4 \times 3 = \underline{3} \times \underline{4}$$

Write in the missing numerals.

$4 \times 2 = \underline{8}$

$6 \times \underline{2} = 12$

$\underline{3} \times 4 = 12$

$2 \times 4 = \underline{8}$

$\underline{2} \times 6 = 12$

$4 \times \underline{3} = 12$

$5 \times 4 = \underline{20}$

$\underline{0} \times 3 = 0$

$\underline{1} \times 3 = 3$

$4 \times 5 = \underline{20}$

$3 \times \underline{0} = 0$

$3 \times \underline{1} = 3$

$2 \times \underline{5} = 10$

$3 \times 6 = \underline{18}$

$2 \times \underline{9} = 18$

$\underline{5} \times 2 = 10$

$6 \times 3 = \underline{18}$

$\underline{9} \times 2 = 18$

Write in the missing numerals.

$9 \times 3 = \underline{27}$

$8 \times 3 = \underline{24}$

$3 \times 7 = \underline{21}$

$3 \times 9 = \underline{27}$

$3 \times 8 = \underline{24}$

$7 \times 3 = \underline{21}$

$5 \times 3 = \underline{15}$

$4 \times 3 = \underline{12}$

$6 \times \underline{4} = 24$

$3 \times 5 = \underline{15}$

$3 \times 4 = \underline{12}$

$\underline{4} \times 6 = 24$

$9 \times 4 = \underline{36}$

$9 \times 5 = \underline{45}$

$8 \times 5 = \underline{40}$

$4 \times 9 = \underline{36}$

$5 \times 9 = \underline{45}$

$5 \times 8 = \underline{40}$

$7 \times \underline{2} = 14$

$6 \times 5 = \underline{30}$

$8 \times 2 = \underline{16}$

$\underline{2} \times 7 = 14$

$5 \times 6 = \underline{30}$

$2 \times 8 = \underline{16}$

# CET II

Multiply.

$$4 \times 5 = \underline{\hspace{2cm}}$$

$$0 \times 5 = \underline{\hspace{2cm}}$$

$$5 \times 4 = \underline{\hspace{2cm}}$$

$$5 \times 0 = \underline{\hspace{2cm}}$$

$$2 \times 6 = \underline{\hspace{2cm}}$$

$$3 \times 7 = \underline{\hspace{2cm}}$$

$$6 \times 2 = \underline{\hspace{2cm}}$$

$$7 \times 3 = \underline{\hspace{2cm}}$$

$$2 \times 4 = \underline{\hspace{2cm}}$$

$$3 \times 5 = \underline{\hspace{2cm}}$$

$$4 \times 2 = \underline{\hspace{2cm}}$$

$$5 \times 3 = \underline{\hspace{2cm}}$$

$$6 \times 1 = \underline{\hspace{2cm}}$$

$$5 \times 9 = \underline{\hspace{2cm}}$$

$$1 \times 6 = \underline{\hspace{2cm}}$$

$$9 \times 5 = \underline{\hspace{2cm}}$$

$$4 \times 7 = \underline{\hspace{2cm}}$$

$$7 \times 4 = \underline{\hspace{2cm}}$$

C I R C L E	TL. PTS.	
	18	100%
C O R R E C T	NO. OF PTS.	%
	17	94
B O X	16	89
	15	83
	14	78
	13	72
	12	67
	11	61
	10	56
	9	50
	8	44
	7	39
	6	33
	5	28
	4	22
	3	17
	2	11
	1	6

Label the factors and the product on the lines below

each problem.

$$5 \quad \times \quad 5 \quad = \quad 25$$

\_\_\_\_\_

$$2 \quad \times \quad 6 \quad = \quad 12$$

\_\_\_\_\_

C I R C L E	TL. PTS.	
	6	100%
C O R R E C T	NO. OF PTS.	%
	5	83
B O X	4	67
	3	50
	2	33
	1	17



**OBJECTIVE:** Completes two multiplication statements which together illustrate the commutative principle for multiplication.

### STANDARD TEACHING SEQUENCE

Page	Supplementary Material
1. Completes multiplication facts. Illustrated with circled sets.	
2. Circles parts of sets to show multiplication facts. Supplies product.	
3. Circles parts of sets to show multiplication facts. Supplies products.	
4. Completes equations.	
5. Completes equations.	
6. Completes equations.	10
7. Fills in blanks in pairs of equations.	11
8. Fills in blanks in pairs of equations.	12
9. CET I.	
CET II.	13

Circle pages that are to be done.

Standard Teaching Sequence, Con't.

1967 - 68

Sequence No.      Prescription No.

{	14R	Studies pictures illustrating the Commutative Law for multiplication.
	15R	Draws pictures and completes multiplication statements illustrating the Commutative Law.

Teaching Aids:

Assorted Flashcards  
 Multo Game  
 Dominos  
 Imma Whiz Game

Textbook Resources:

Book	Teaching Pages	Practice Pages
Harcourt, Brace & World, 1966 <u>Elementary Mathematics</u> - 3	188	220

Objective: D-Mult-6-14R

Purpose: Teaches the Commutative Law with pictured and oral examples. May be used as remedial work.

Notes to Recorder: Enunciate "Com-mu-ta-tive" slowly in beginning of script.

Title: The Commutative Law

Hi! Do you have your thinking cap on? I hope so. Today you are going to study the Commutative Law. Have you ever heard of the Commutative Law before? (pause) Commutative Law - say it with me - Commutative Law. Now say it by yourself. (long, long pause) Commutative Law.

Put your name, room and date at the top of the 1st workpage. BELL Look at the ducks on the top of the page. BELL Picture A is 1 group of 4 ducks. It shows the multiplication fact  $1 \times 4$ . (pause) In picture B there are 4 groups of 1 duck each. This shows the multiplication fact  $4 \times 1$ . How many ducks are there in picture A? (pause) 4 ducks. How many ducks are there in picture B? (pause) 4 ducks too. Both sets have the same number of ducks so  $1 \times 4$  equals  $4 \times 1$ . Put your finger on the equals sign. (pause) 1 times 4 equals 4 times 1. This is an example of the Commutative Law. When 4 and 1 are multiplied, the answer is always 4. It doesn't matter in what order the numbers are written.

Part C is a picture of 2 times 3. (pause) Part D is a picture of 3 times 2 (pause) The numbers 3 and 2 are used in both problems. Count the balloons and see if 2 groups of 3 balloons is the same as 3 groups of 2 balloons. BELL They are the same so  $2 \times 3 = 3 \times 2$ . KF Draw an equals sign between the 2 problems. BELL This is another

example of the Commutative Law because we can change the 2 numbers in a problem around and still get the same answer.  $2 \times 3 = \underline{6}$ ;  $3 \times 2 = \underline{6}$  so  $2 \times 3 = 3 \times 2$ .

Turn to the next workpage, and fill in the heading. BELL At the top of the page are 3 examples of the Commutative Law. Look at each example. (pause) Do you see that the numbers on 1 side of the equals sign are the same as the numbers on the other side of the equals sign only they are changed around? (pause) Say the problems with me. 1 times 4 equals  $4 \times 1$  (pause) 2 times 3 = 3 times 2. (pause)  $4 \times 3 = 3 \times 4$ .

Let's draw a picture to prove 4 times 3 equals 3 times 4 on your paper. In the space by E draw 4 groups of 3 triangles. BELL Draw a circle around each of the 4 groups. BELL Next we will use the same 2 numbers, 4 and 3, but we will change them around just as the Commutative Law says we can to show 3 times 4. In space F draw 3 groups of 4 triangles. BELL Draw a circle around each of the 3 groups. BELL How many triangles did you draw in space E? BELL You should have drawn 12. How many triangles did you draw in picture F? BELL There should be 12 triangles in Part F too. From your picture you can see that  $4 \times 3 = 3 \times 4$ . Draw an equals sign between the problems. BELL

So, using the Commutative Law we could say 7 times 3 equals 3 times 7 or we could say 2 billion times 9 equals 9 times 2 billion. Pretty neat, isn't it?

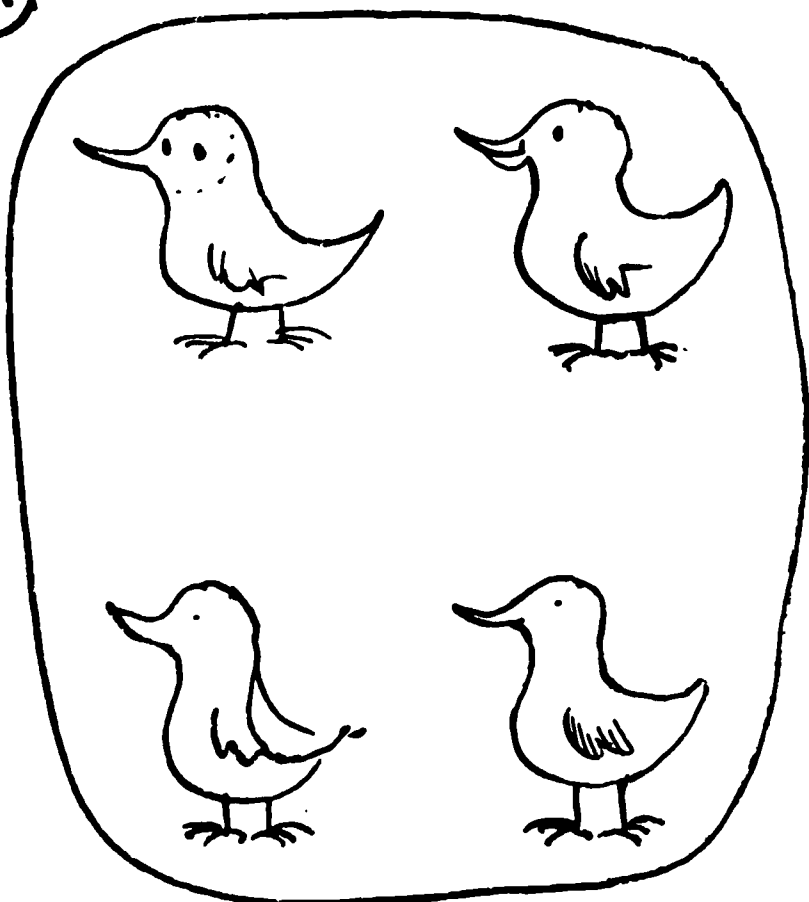
Look at the problems at the bottom of your workpage. You must make each number sentence true. Let's do number 1 together.  $5 \times 2 = 2 \times$  what number? The Commutative Law says that you can

make this number sentence true by putting what number in the box?  
(pause) 5! Write a 5 in the box. BELL  $5 \times 2 = 2 \times 5$ . If you are not sure, draw a picture of 5 groups of 2 circles. Then draw a picture of 2 groups of 5 circles and see if there are 10 circles in both pictures - there should be. BELL Use the Commutative Law and make the rest of the number sentences true. BELL

The Commutative Law is a lot easier to use than it is to say. Say it again with me: Com-mu-ta-tive Law. Good bye for now. Take your workpages to an Aide and put this disc away. BELL

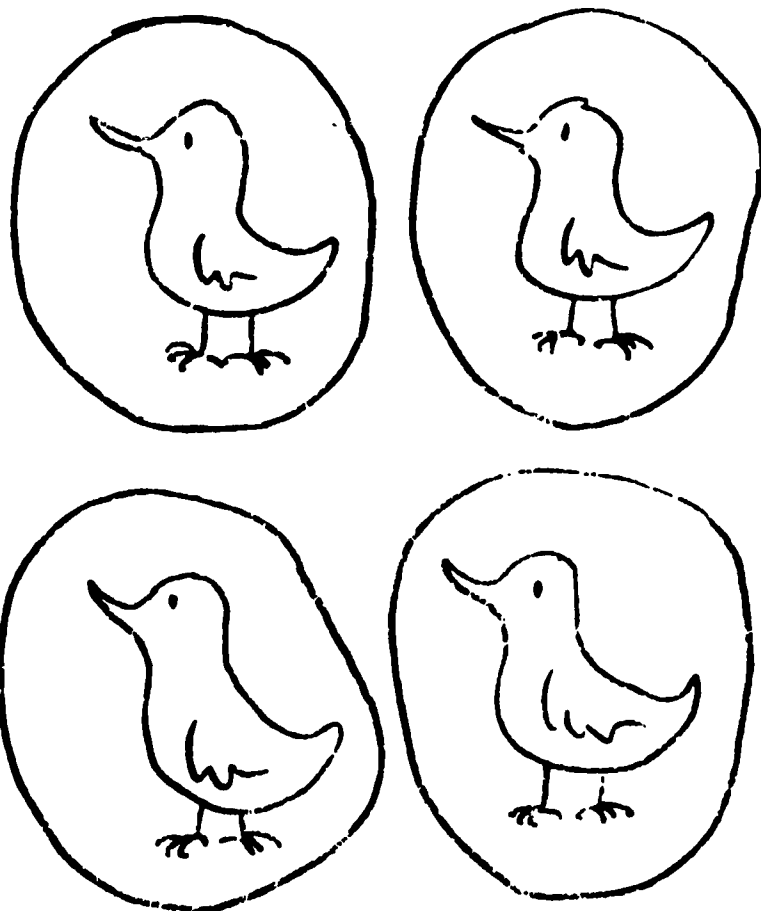
Get disc D-Mult-6-14R.

(A)



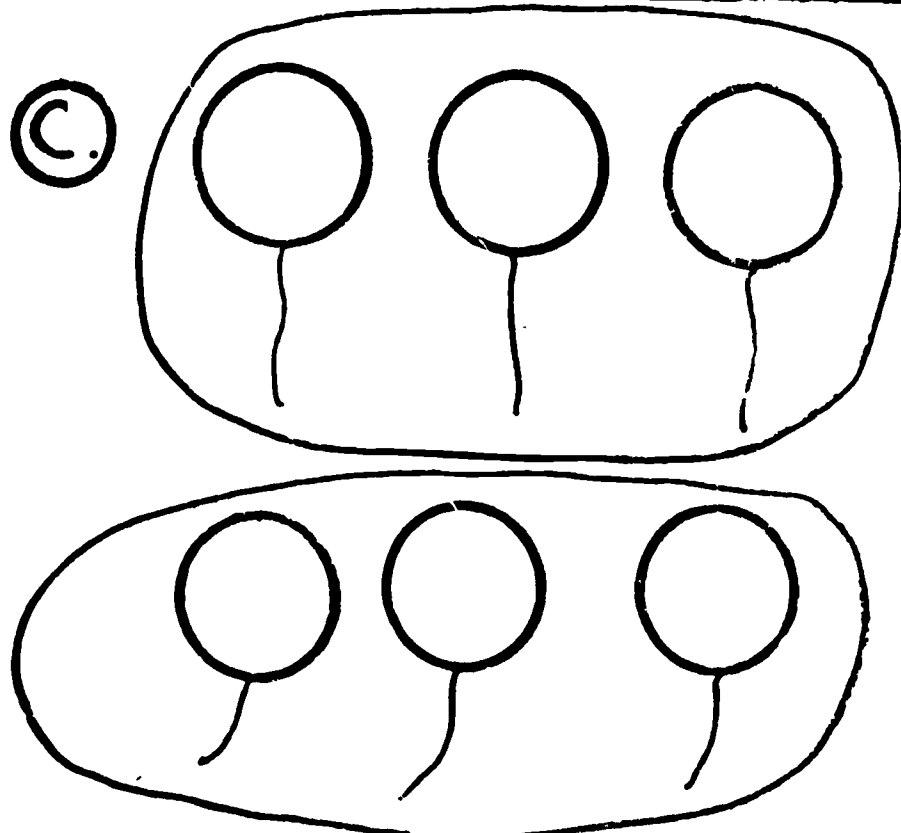
$$1 \times 4$$

(B)



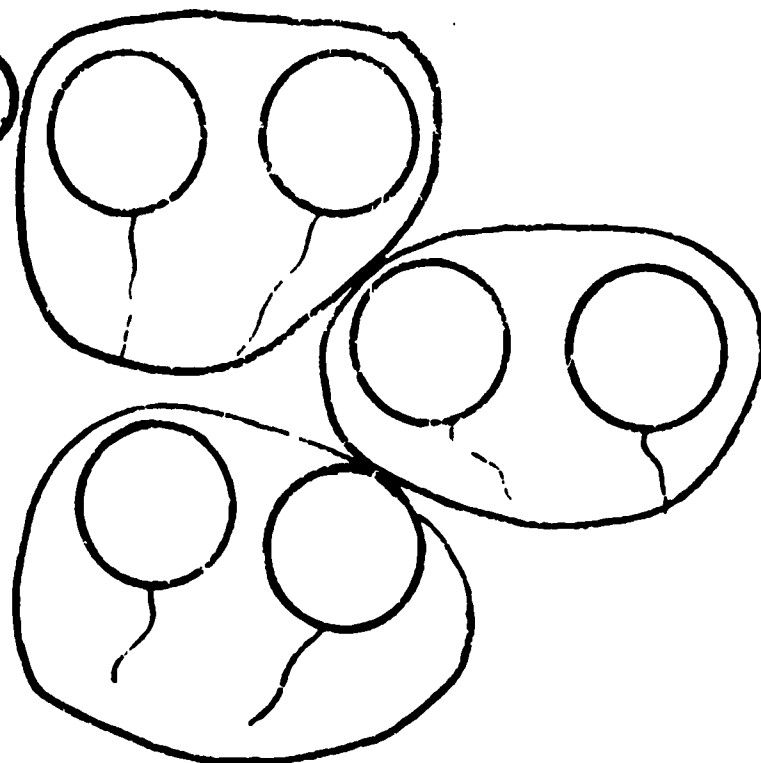
$$4 \times 1$$

(C)



$$2 \times 3$$

(D)



$$3 \times 2$$

D-Mult-6

14R

# Commutative Law

$$1 \times 4 = 4 \times 1$$

$$4 \times 3 = 3 \times 4$$

$$2 \times 3 = 3 \times 2$$

E.

F.

$$4 \times 3$$

==

$$3 \times 4$$

$$1) \quad 5 \times 2 = 2 \times \boxed{\phantom{00}}$$

$$4) \quad 39 \times 61 = 61 \times \boxed{\phantom{00}}$$

$$2) \quad 0 \times 8 = 8 \times \boxed{\phantom{00}}$$

$$5) \quad 6 \times 7 = \boxed{\phantom{00}} \times 6$$

$$3) \quad 503 \times 21 = \boxed{21} \times 503$$

$$6) \quad 94 \times 18 = \boxed{\phantom{00}} \times 94$$

D-Mult-f

15R

These are the five skill sheets completed by Susan and corrected by the Aide.

Record (in the role of the Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets.

Susan can: Circle sets to show multiplication facts and supply factors to complete a multiplication equation.

Susan cannot: \_\_\_\_\_

Describe how Susan worked with the prescription: She completed her work with greater independence and more confidence than she has ever demonstrated.

Based on your analysis of Susan's work, you decide to: (check one)

☐ Revise original prescription.

☒ Extend prescription.

☐ Assign a CET.

Why? Susan needs a periodic review of the multiplication facts to enable her to work with consistent accuracy. (This is a follow-up on a previous diagnostic decision.)

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 6 in particular), she was assigned the following on 3/13 :

<u>Page</u>	<u>Reason</u>
12	Mixed practice of multiplication fact equations.
Flashcards 02 (John)	Susan and John need this work; Susan will benefit from this peer tutoring setting.

Estimate of time needed: 30 minutes maximum.

Recheck this page.

Record this page and date on the Prescription Sheet.



## TO THE STUDENT

Circle yes or no.

$$6 \times 4 = 24$$

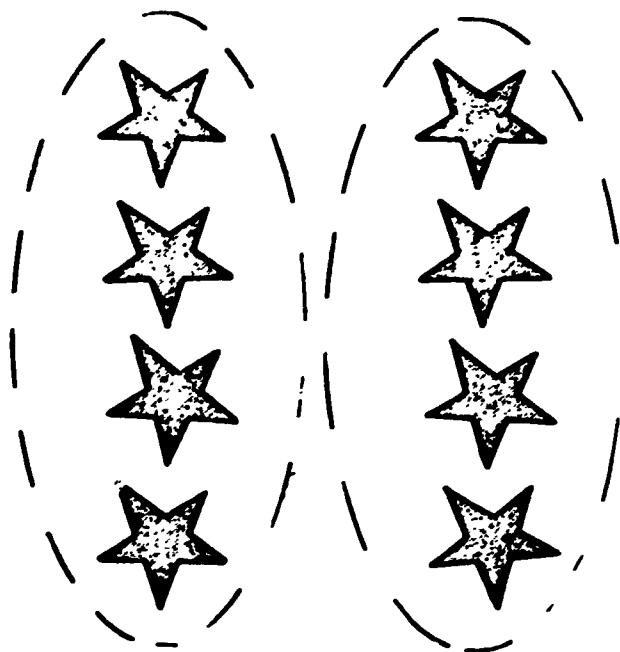
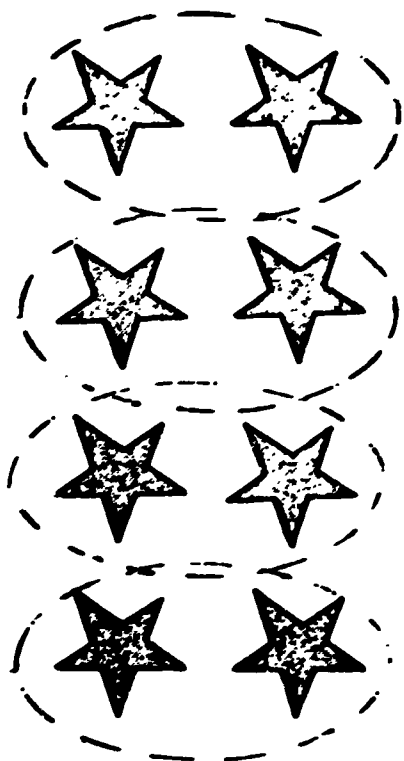
Does  $4 \times 6 = 24$ ?  
yes  
no

In this booklet you will learn how to answer this question.

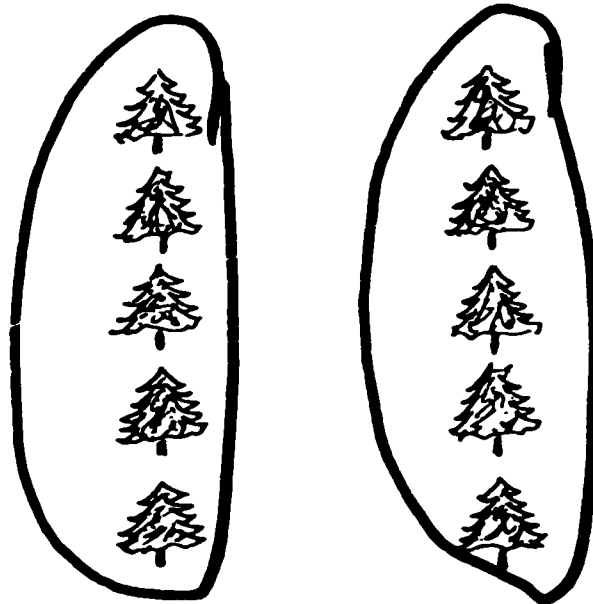
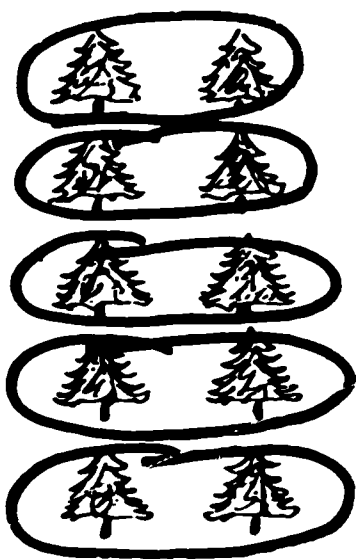
Answer

yes

Find the answers. Draw a circle around each part of a set.



$$4 \times 2 = \underline{8} \longleftrightarrow 2 \times 4 = \underline{8}$$



$$5 \times 2 = \underline{10} \longleftrightarrow 2 \times 5 = \underline{10}$$

Write in the missing numerals.

$4 \times 3 = \underline{3} \times 4$

$\underline{5} \times 4 = 4 \times 5$

$5 \times 1 = \underline{1} \times 5$

$\underline{6} \times 2 = 2 \times 6$

$\underline{7} \times 4 = 4 \times 7$

$6 \times 3 = \underline{3} \times 6$

$3 \times \underline{5} = 5 \times 3$

$9 \times 1 = 1 \times \underline{9}$

$9 \times 3 = \underline{3} \times 9$

$4 \times 7 = \underline{7} \times 4$

$0 \times 3 = 3 \times \underline{0}$

$8 \times 2 = 2 \times \underline{8}$

$8 \times 2 = \underline{2} \times 8$

$6 \times 0 = \underline{0} \times 6$

$3 \times 5 = \underline{5} \times 3$

all  
C

The COMMUTATIVE PRINCIPLE says that the order of the numbers does not affect the answer.

Write in the missing numerals to show the commutative principle.

$$2 \times 5 = \underline{5} \times \underline{2} = 10$$

$$3 \times 4 = \underline{4} \times \underline{3} = \underline{12}$$

$$6 \times 2 = \underline{2} \times \underline{6} = \underline{12}$$

$$3 \times 5 = \underline{5} \times \underline{3} = \underline{15}$$

$$2 \times 7 = \underline{6} \times \underline{2} = \underline{14} \times$$

$$3 \times 6 = \underline{6} \times \underline{3} = \underline{18}$$

$$2 \times 9 = \underline{9} \times \underline{2} = \underline{18}$$

$$3 \times 7 = \underline{7} \times \underline{4} = \underline{21} \times$$

For more practice, do Page 10.

Write in the missing numerals.

$$6 \times 0 = \underline{0}$$

$$0 \times 6 = \underline{0}$$

$$4 \times 7 = \underline{28}$$

$$7 \times 4 = \underline{28}$$

$$9 \times \underline{4} = 36$$

$$\underline{4} \times 9 = 36$$

$$5 \times 10 = \underline{50}$$

$$10 \times 5 = \underline{50}$$

$$4 \times \underline{6} = 24$$

$$\underline{6} \times 4 = 24$$

$$8 \times \underline{4} = 32$$

$$\underline{4} \times 8 = 32$$

$$8 \times 3 = \underline{24}$$

$$3 \times 8 = \underline{24}$$

$$4 \times 5 = \underline{20}$$

$$5 \times 4 = \underline{20}$$

~~$$5 \times \underline{1} = 0$$~~

~~$$\underline{1} \times 5 = 0$$~~

For more practice, do Page 12.

This is the skill sheet completed by Susan and corrected by the Aide.

Record (in the role of the Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheet.

Susan can: Supply products and factors in mixed multiplication equations.

Susan cannot: \_\_\_\_\_  
\_\_\_\_\_

Describe how Susan worked with the prescription: Susan worked well in the peer tutor setting; this added to her motivation for further multiplication review and she requested that she be used to tutor other students in the future.

Based on your analysis of Susan's work, you decide to: (check one)

\_\_\_\_\_ Revise original prescription

\_\_\_\_\_ Extend prescription

X Assign a CET for Skill 6

Why? Susan's performance on the materials indicates skill mastery.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 6 in particular), she was assigned the following on 3/14:

Page

13

Reason

CET to test mastery of  
Skill 6

Estimate of time needed: 20 minutes maximum.

Recheck this CET page.

Record this page and date on the Prescription Sheet.

Write in the missing numerals.

$9 \times 3 = \underline{27}$

$8 \times 3 = \underline{24}$

$3 \times 7 = \underline{21}$

$3 \times 9 = \underline{27}$

$3 \times 8 = \underline{24}$

$7 \times 3 = \underline{21}$

$5 \times 3 = \underline{15}$

$4 \times 3 = \underline{12}$

$6 \times \underline{4} = 24$

$3 \times 5 = \underline{15}$

$3 \times 4 = \underline{12}$

$\underline{4} \times 6 = 24$

$9 \times 4 = \underline{36}$

$9 \times 5 = \underline{45}$

$8 \times 5 = \underline{40}$

$4 \times 9 = \underline{36}$

$5 \times 9 = \underline{45}$

$5 \times 8 = \underline{40}$

$7 \times \underline{2} = 14$

$6 \times 5 = \underline{30}$

$8 \times 2 = \underline{16}$

$\underline{2} \times 7 = 14$

$5 \times 6 = \underline{30}$

$2 \times 8 = \underline{16}$

This is the Skill 6 CET completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the CET.

Susan can: Part I - Supply products of mixed multiplication equations with factors 1-9. Part II -

Susan cannot: Label factors and products in multiplication equations.

Describe how Susan worked with the prescription: She viewed this CET in a diagnostic way and accepted her lack of mastery in Part II.

Based on your analysis of Susan's work, you decide to:

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for Skill \_\_\_\_.
- ☐ Assign Part II of CET for Skill \_\_\_\_.
- ☒ Write initial prescription for Skill 7.

Why? Susan needs to become familiar with the labels of factor and product in multiplication equations.



## CET II

Multiply.

$4 \times 5 = \underline{20}$

$0 \times 5 = \underline{0}$

$5 \times 4 = \underline{20}$

$5 \times 0 = \underline{0}$

$2 \times 6 = \underline{12}$

$3 \times 7 = \underline{21}$

$6 \times 2 = \underline{12}$

$7 \times 3 = \underline{21}$

$2 \times 4 = \underline{8}$

$3 \times 5 = \underline{15}$

$4 \times 2 = \underline{8}$

$5 \times 3 = \underline{15}$

$6 \times 1 = \underline{6}$

$5 \times 9 = \underline{45}$

$1 \times 6 = \underline{6}$

$9 \times 5 = \underline{45}$

$4 \times 7 = \underline{28}$

$7 \times 4 = \underline{28}$

C I R C L E	TL. PTS.	
	NO. OF PTS.	%
C O R R E C T	18	100%
	17	94
	16	89
	15	83
	14	78
	13	72
	12	67
	11	61
	10	56
	9	50
	8	44
	7	39
	6	33
	5	28
	4	22
	3	17
	2	11
	1	6

Label the factors and the product on the lines below  
each problem.

$5 \times 5 = 25$

X ——— X ——— X ———

$2 \times 6 = 12$

X ——— X ——— X ———

C I R C L E	TL. PTS.	
	NO. OF PTS.	%
C O R R E C T	6	100%
	5	83
	4	67
	3	50
	2	33
	1	17
	0	0
B O X		

This is a copy of the STS booklet for Skill 7. Examine all the skill sheets and STS sheets (pp. 9 & 10) in the booklet to become familiar with the materials for this skill.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 7 in particular) and Susan's work on Part II of this CET, she was assigned the following on 3/14 :

<u>Page</u>	<u>Reason</u>
Student Page	Introduces skill, previews work
1	Identifying product and factor clues
2	Identifying product and factor clues
3	Identifying product and no clues

Estimate of time needed: one class period

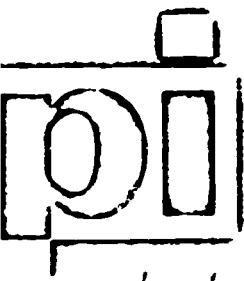
Recheck these four pages.

Record these pages and the date on your Prescription Sheet.

OL CODE

NAME \_\_\_\_\_

NUMBER \_\_\_\_\_ CLASS \_\_\_\_\_



Mathematics Curriculum Staff

MATHEMATICS

# Standard Teaching Sequence Booklet

TEACHER'S EDITION

LEVEL D

MULTIPLICATION (05)

SKILL 7

on materials developed by The Mathematics Curriculum Staff,  
Research and Development Center, University of Pittsburgh; Joseph  
, Ph.D., Director, Edith Kohut; Barbara Thomas.

Written by the staff of Appleton-Century-Crofts under the direction of  
Jerome D. Kaplan, Ed.D., Teachers College, Columbia University

on-Century-Crofts



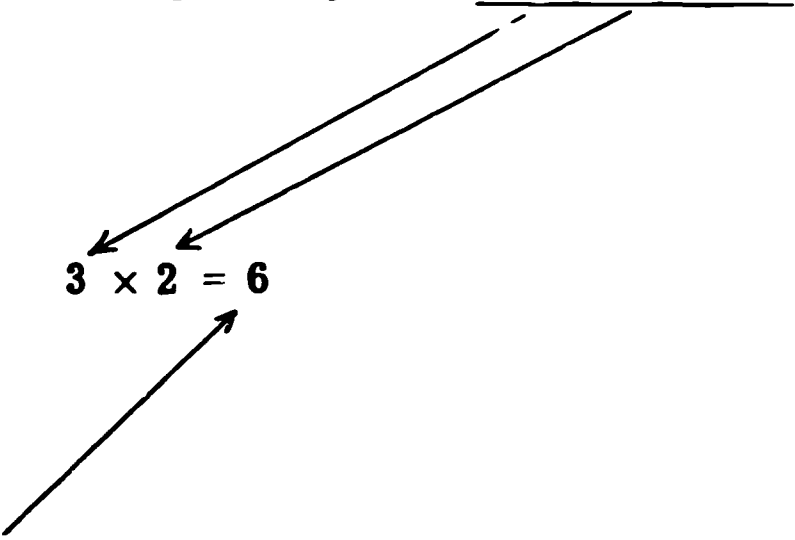
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## DEVELOPMENTAL EDITION

## TO THE STUDENT

What are the numbers called that are multiplied together? \_\_\_\_\_


$$3 \times 2 = 6$$

What is the answer called? \_\_\_\_\_

This booklet will teach you to use the words product and factor.

### Answers

factors, product

The numbers that are multiplied together are called factors.

The answer to a multiplication question is called the product.

$$\begin{array}{ccccc}
 2 & \times & 3 & = & 6 \\
 \uparrow & & \uparrow & & \uparrow \\
 \text{Factor} & & \text{Factor} & & \text{Product}
 \end{array}$$

In this problem the factors are 2 and 3 and the product is 6.

Circle the factors.

$$(5) \times (2) = 10$$

$$(3) \times (1) = 3$$

$$(3) \times (4) = 12$$

$$(4) \times (5) = 20$$

Circle the product.

$$4 \times 1 = (4)$$

$$3 \times 3 = (9)$$

$$3 \times 5 = (15)$$

$$2 \times 2 = (4)$$

For extra practice go Page 6.

The numbers we multiply together are called factors.

$$2 \times 8 = 16$$

The answer is called the product.

Circle the factors.

$$\begin{array}{r} \textcircled{3} \\ \times \textcircled{5} \\ \hline 15 \end{array}$$

$$\textcircled{0} \times \textcircled{8} = 0$$

$$\textcircled{1} \times \textcircled{1} = 1$$

$$\textcircled{4} \times \textcircled{3} = 12$$

$$\textcircled{3} \times \textcircled{2} = 6$$

$$\begin{array}{r} \textcircled{6} \\ \times 2 \\ \hline 12 \end{array}$$

$$\begin{array}{r} \textcircled{5} \\ \times \textcircled{2} \\ \hline 10 \end{array}$$

$$\textcircled{3} \times \textcircled{1} = 3$$

Circle the products.

$$2 \times 9 = \textcircled{18}$$

$$3 \times 6 = \textcircled{18}$$

$$5 \times 1 = 5$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline \textcircled{9} \end{array}$$

$$4 \times 4 = \textcircled{16}$$

Write the word product or factor in the blanks.

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array} \leftarrow \underline{\text{product}}$$

$$6 \times 2 = 12$$

↑  
factor

$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array} \leftarrow \underline{\text{product}}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array} \leftarrow \underline{\text{product}}$$

$$\begin{array}{r} 2 \\ \times 0 \\ \hline 0 \end{array} \leftarrow \underline{\text{product}}$$

$$3 \times 6 = 18$$

↑

factor

$$6 \times 1 = 6$$

↑

product

$$4 \times 5 = 20$$

↑

product

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array} \leftarrow \underline{\text{factor}}$$

For extra practice, do Page 7.

Write the word product or factor in the blanks.

$$\begin{array}{r} 8 \\ \times 1 \\ \hline 8 \end{array} \leftarrow \text{product}$$

$$2 \times 1 = 2$$

↑  
factor

$$\begin{array}{r} 3 \\ \times 1 \\ \hline 3 \end{array} \leftarrow \text{factor}$$

$$4 \times 2 = 8$$

↑  
factor

$$\begin{array}{r} 5 \\ \times 0 \\ \hline 0 \end{array} \leftarrow \text{factor}$$

$$3 \times 3 = 9$$

↑  
factor

$$0 \times 8 = 0$$

↑  
product

$$\begin{array}{r} 9 \\ \times 1 \\ \hline 9 \end{array} \leftarrow \text{factor}$$



CET I

Circle each factor and draw a box around each product.

4 × 7 = 28

2 × 9 = 18

C I R C L E  C O R R E C T  B O X	TL PTS	
	12	100%
	NO. OF PTS.	%
	11	92
	10	83
	9	75
	8	67
	7	58
	6	50
	5	42
	4	33
	3	25

Write the word product or factor for each numeral.

6 ← \_\_\_\_\_

× 3 ← \_\_\_\_\_

18 ← \_\_\_\_\_

4 ← \_\_\_\_\_

× 4 ← \_\_\_\_\_

16 ← \_\_\_\_\_

Mary bought 3 bags of marbles. Each bag had 10 marbles in it. How many marbles does Mary have? \_\_\_\_\_ marbles

John works in a grocery store 3 days a week. How many days does he work in 3 weeks? \_\_\_\_\_ days

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	2	100%
	NO. OF PTS.	%
	1	50

Fill in the blanks.

$$2 \times 5 = 10$$

factor   factor   product

In this problem the factors are 2 and 5, and the product is 10.

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array}$$

In this problem the factors are 4 and 2  
and the product is 8.

$$2 \times 0 = 0$$

The factors are 2 and 0, the product is 0.

$$3 \times 4 = 12$$

The factors are 3 and 4, and the product is 12

Write product or factor in each blank.

$$\begin{array}{ccc} 3 & \times & 2 & = & 6 \\ \uparrow & & \uparrow & & \uparrow \\ \text{factor} & & \text{factor} & & \text{product} \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array} \leftarrow \text{product}$$

$$4 \times \begin{array}{c} 3 \\ \uparrow \\ \text{factor} \end{array} = 12$$

$$\begin{array}{c} 3 \\ \uparrow \\ \text{factor} \end{array} \times 1 = 3$$

$$4 \leftarrow \text{factor}$$

$$\begin{array}{r} \times 2 \\ \hline 8 \end{array}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array} \leftarrow \text{product}$$

$$6 \times \begin{array}{c} 2 \\ \uparrow \\ \text{factor} \end{array} = 12$$

## CET II

Circle each factor and draw a box around each product.

$$4 \times 3 = 12$$

$$3 \times 8 = 24$$

C I R C L E	TL PTS	
	12	100%
C O R R E C T	NO OF PTS	%
	11	92
B O X	10	83
	9	75
	8	67
	7	58
	6	50
	5	42
	4	33
	3	25
	2	17
	1	8

Write the word product or factor for each numeral.

7 ← \_\_\_\_\_

2 ← \_\_\_\_\_

× 3 ← \_\_\_\_\_

× 8 ← \_\_\_\_\_

21 ← \_\_\_\_\_

16 ← \_\_\_\_\_

Joey wants to buy six pieces of candy. Each piece costs 2¢.

How much money does he need? \_\_\_\_\_¢

Mary has 4 dolls. Jane has 3 times as many dolls as

Mary has. How many dolls does Jane have? \_\_\_\_\_ dolls

C I R C L E	TL. PTS.	
	2	100%
C O R R E C T	NO. OF PTS.	%
	1	50
B O X		

OBJECTIVE: Uses the terms "product" and "factor" to label correctly the parts of a multiplication problem.

STANDARD TEACHING SEQUENCE

Page	Supplementary Material
1. Identifies product and factors by marking each as directed.	6
2. Identifies product and factors by marking each as directed.	
3. Writes "product" or "factor" to identify the parts of the given problems.	7
4. Writes "product" or "factor" to identify the parts of the given problems.	
5. CET I.	
CET II.	8

Circle pages that are to be done

Standard Teaching Sequence, Con't.

1967 - 68

Teaching Aids:

Instructo Math Vocabulary Set, Flashcards

Textbook Resources:

Book	Teaching Pages	Practice Pages
Harcourt, Brace & World, 1966 <u>Elementary Mathematics</u> - 3	190	

These are the four skill sheets completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets.

Susan can: Identify the factor and product in multiplication equations when strong clues are provided.

Susan cannot: Identify factor and product in multiplication equations without clues.

Describe how Susan worked with the prescription: She requested teacher help when material became difficult (pp. 2-3).

Based on your analysis of Susan's work, you decide to:

- ☐ Revise original prescription
- ☒ Extend prescription
- ☐ Assign a CET

Why? Susan does not understand the concept of factor and product.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 7 in particular), she was assigned the following on 3/15 :

<u>Page</u>	<u>Reason</u>
p. 90 <u>Elementary Math</u> - <u>3</u> 06 7	<div><div>This presents the factor-product concept in a visual way.</div><div>Labeling the factor, a product in multiplication equations</div></div>

Estimate of time needed:

Recheck this skill sheet and the material in the curriculum text.

Record the pages and date on the Prescription Sheet.

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$$3 \times 2 = 6$$

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### Answers

factors, product



The numbers that are multiplied together are called factors.

The answer to a multiplication question is called the product.

$$\begin{array}{ccccc}
 2 & \times & 3 & = & 6 \\
 \uparrow & & \uparrow & & \uparrow \\
 \text{Factor} & & \text{Factor} & & \text{Product}
 \end{array}$$

In this problem the factors are 2 and 3 and the product is 6.

Circle the factors.

$$(5) \times (2) = 10$$

$$(3) \times (1) = 3$$

$$(3) \times (4) = 12$$

$$(4) \times (5) = 20$$

Circle the product.

$$4 \times 1 = (4)$$

$$3 \times 3 = (9)$$

$$3 \times 5 = (15)$$

$$2 \times 2 = (4)$$

For extra practice do Page 6.

The numbers we multiply together are called factors.

$$2 \times 3 = 16$$

The answer is called the product.

Circle the factors.

$$\begin{array}{r} (3) \\ \times (5) \\ \hline 15 \end{array}$$

$$0 \times (8) = (0) \times$$

$$1 \times (1) = (1) \times$$

$$4 \times (3) = (12) \times$$

$$3 \times (2) = (6) \times$$

$$\begin{array}{r} (6) \\ \times (2) \\ \hline 12 \end{array}$$

$$\begin{array}{r} (5) \\ \times (2) \\ \hline 10 \end{array}$$

$$3 \times (1) = (3) \times$$

Circle the products.

$$2 \times 9 = (18)$$

$$3 \times 6 = (18)$$

$$5 \times 1 = (5)$$

$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array}$$

$$4 \times 4 = 16 \times$$

Write the word product or factor in the blanks.

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array} \leftarrow \text{product}$$

$$6 \times 2 = 12$$

↑  
factor

$$\begin{array}{r} 3 \\ \times 3 \\ \hline 9 \end{array} \leftarrow \text{product}$$

$$\begin{array}{r} 3 \\ \times 4 \\ \hline 12 \end{array} \leftarrow \text{product}$$

$$\begin{array}{r} 2 \\ \times 0 \\ \hline 0 \end{array} \leftarrow \text{product}$$

$$3 \times 6 = 18$$

↑

product X

$$6 \times 1 = 6$$

↑

factor X

$$4 \times 5 = 20$$

↑

factor X

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array} \leftarrow \text{product} X$$

For extra practice, do Page 7.

This is the skill sheet completed by Susan and corrected by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the skill sheets.

Susan can: Identify and label the factor and product in multiplication equations without clues.

Susan cannot: \_\_\_\_\_

Describe how Susan worked with the prescription: She got her own materials; she worked quickly and independently.

Based on your analysis of Susan's work, you decide to: (check one)

\_\_\_\_\_ Revise original prescription

\_\_\_\_\_ Extend prescription

X Assign a CET for Skill 7

Why? Susan's performance on the materials indicates skill mastery.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 7 in particular), she was assigned the following on 3/16 :

Page

Reason

5

CET to determine skill mastery

Estimate of time needed: 20 minutes maximum.

Recheck this CET.

Record this page and date on the Prescription Sheet.

Write product or factor in each blank.

$$\begin{array}{ccc} 3 & \times & 2 & = & 6 \\ \uparrow & & \uparrow & & \uparrow \\ \text{factor} & & \text{factor} & & \text{product} \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array} \leftarrow \text{product}$$

$$4 \times 3 = 12$$

$\uparrow$   
factor

$$\begin{array}{r} 3 \times 1 = 3 \\ \uparrow \\ \text{factor} \end{array}$$

$$\begin{array}{r} 4 \\ \times 2 \\ \hline 8 \end{array} \leftarrow \text{factor}$$

$$\begin{array}{r} 2 \\ \times 2 \\ \hline 4 \end{array} \leftarrow \text{product}$$

$$6 \times 2 = 12$$

$\uparrow$   
factor

This is the Skill 7 CET completed by Susan and recorded by the Aide.

Record (in the role of Aide) the scores on the Prescription Sheet.

Look at Susan's work on the CET.

Susan can: Part I - Identify and label factor and product in multiplication equations. Part II - Solve one-step word problems using multiplication factor of 3.

Susan cannot: \_\_\_\_\_

Describe how Susan worked with the prescription: She worked quickly and confidently.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☒ Assign entire CET for Skill 8.
- ☐ Assign Part II of CET for Skill \_\_\_\_.
- ☐ Write initial prescription for Skill \_\_\_\_.

Why? Pretest score (Skill 8) was 100%; Part II of this CET was above mastery; a full CET on Skill 8 will verify Pretest score and determine if Susan has retained her mastery over a long period of work.

Based on the diagnosis of Susan's behavior, her performance on the Pretest (Skill 8 in particular) and Susan's work on Part II of CET for Skill 7, she was assigned the following on 3/16 :

Page

Reason

9

CET to test mastery of Skill 8

Estimate of time needed: 20 minutes maximum.

Examine the objective for Skill 8 and recheck this CET in Skill 8 STS booklet.

Record the page and date on the Prescription Sheet.

# CET I

Circle each factor and draw a box around each product.

$$4 \times 7 = 28$$

$$2 \times 9 = 18$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	12	100%
	NO. OF PTS.	%
	11	92
	10	83
	9	75
	8	67
	7	58
	6	50
	5	42
	4	33
	3	25
	2	17
	1	8

Write the word product or factor for each numeral.

$$6 \leftarrow \underline{f}$$

$$\underline{\times 3} \leftarrow \underline{f}$$

$$18 \leftarrow \underline{p}$$

$$4 \leftarrow \underline{f}$$

$$\underline{\times 4} \leftarrow \underline{f}$$

$$16 \leftarrow \underline{p}$$

Mary bought 3 bags of marbles. Each bag had 10 marbles in it. How many marbles does Mary have? 30 marbles

John works in a grocery store 3 days a week. How many days does he work in 3 weeks? 9 days

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	2	100%
	NO. OF PTS.	%
	1	50

This is the Skill 8 CET completed by Susan and corrected by the Aide.

Record (in the role of Aide) the score on the Prescription Sheet. Note that there is no Part II because this is the final skill in the D-Mult. Unit.

Look at Susan's work on the CET.

Susan can: Solve one-step multiplication problems with factors of 1-50.

Susan cannot: \_\_\_\_\_

Describe how Susan worked with the prescription: She completed her work independently.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for skill \_\_\_\_.
- ☐ Assign Part II of CET for skill \_\_\_\_.
- ☐ Write initial prescription for skill \_\_\_\_.
- ☒ Assign a posttest.
- ☐ Assign the next unit pretest.

Why? Susan's performance on the materials for this unit indicates mastery of the unit objectives.

Based on the diagnosis of Susan's behavior and her performance on the unit materials, she was assigned the following on 3/16 :

Review	To ensure Susan's comfort in a testing situation, she will review her work and take her test when she judges she is ready.
--------	--

Posttest	To test mastery of unit
----------	-------------------------

Estimate of time needed: 1-2 class periods.

Record the review and Posttest on the Prescription Sheet.



CET I

Solve each problem.

Miss Smith has two spelling teams in her classroom. Each team has 10 children. How many children are in the class?

20 children

Donna has 3 kinds of coins. If she has 5 of each kind, how many coins does she have? 15 coins

In Miss Boston's classroom there are 5 rows of desks with 6 desks in each row. How many desks are there altogether?

30 desks

Last Saturday Dick saw a relay race. There were 4 teams with 4 men on each team. How many men were in the relay race? 16 men

Fred and Julie are building a pen for their pet rabbits. It will have 4 sides. They need 3 feet of wire screen for each side.

How many feet of screen do they need to enclose the sides?

12 feet

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	5	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

**This is a copy of Susan's Posttest that has been completed and corrected by the Aide.**

**Turn to page 351-362 for directions for the Aide. P. 351 will tell you (in the role of the Aide) where to record information on the first page of your Prescription Sheets; p. 360 will tell you where to record information on the Unit Test Record.**

SCHOOL CODE

NAME Susan Markham

NUMBER 1234 CLASS 4



*university of pittsburgh*

**MATHEMATICS**

**Post-Test**

**LEVEL D**

**MULTIPLICATION (05)**

Developed by The Testing and Evaluation Staff, Learning Research and Development Center, University of Pittsburgh; Richard Cox, Ph.D., Director

Appleton-Century-Crofts



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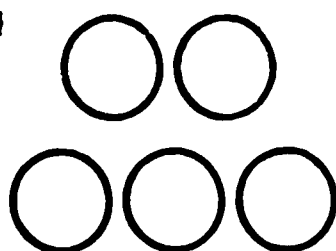
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**DEVELOPMENTAL EDITION**

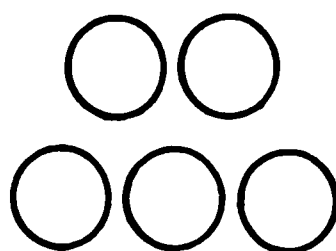


C I R C U L A R C O U N T Y B O X	TL. PTS.	
	1	100
	NO. OF PTS.	2
	4	80
	3	60
	2	40
	1	20

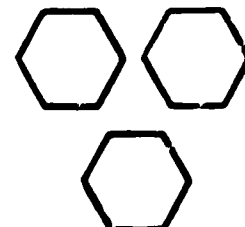
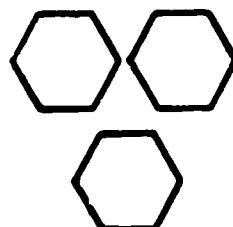
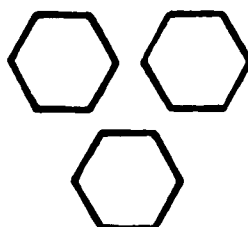
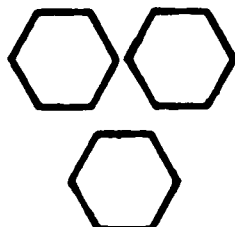
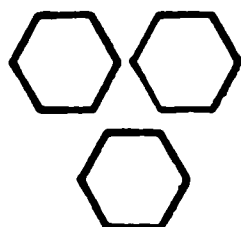
Directions: Complete each equation.



$$5 + 5 = \underline{10}$$

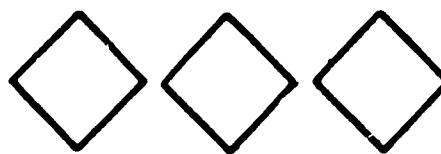
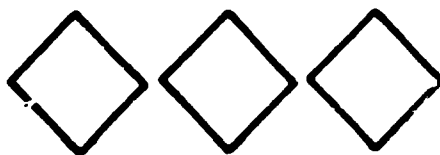
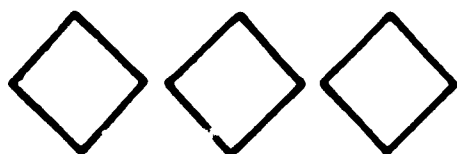


$$2 \times 5 = \underline{10}$$



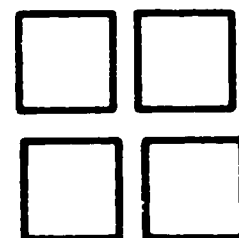
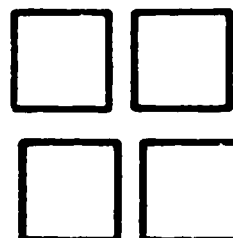
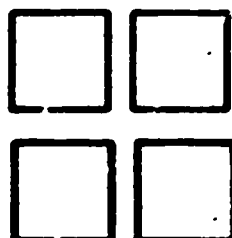
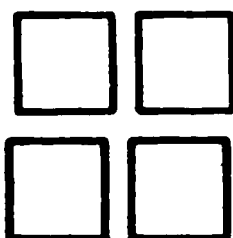
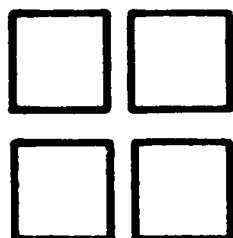
$$3 + 3 + 3 + 3 + 3 = \underline{15}$$

$$5 \times 3 = \underline{15}$$



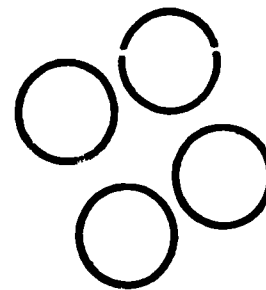
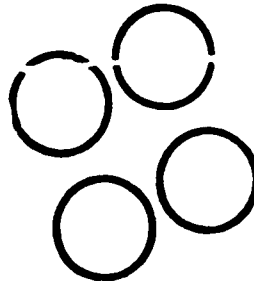
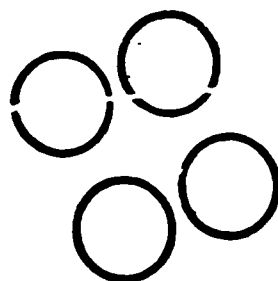
$$3 + 3 + 3 = \underline{9}$$

$$3 \times 3 = \underline{9}$$



$$4 + 4 + 4 + 4 + 4 = \underline{20}$$

$$5 \times 4 = \underline{20}$$



$$4 + 4 + 4 = \underline{12}$$

$$3 \times 4 = \underline{12}$$

Directions: Multiply.

$$\begin{array}{r} 7 \\ \times 1 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 8 \\ \times 0 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 1 \\ \times 9 \\ \hline 9 \end{array}$$

$$\begin{array}{r} 0 \\ \times 3 \\ \hline 0 \end{array}$$

$$6 \times 1 = \underline{6}$$

$$0 \times 4 = \underline{0}$$

$$1 \times 1 = \underline{1}$$

$$2 \times 0 = \underline{0}$$

C I R C L E C O R R E C T B O X	TL. PTS.	
	NO. OF PTS.	PERCENT
	8	100%
	7	87.5%
	6	75%
	5	62.5%
	4	50%
	3	37.5%
	2	25%
	1	12.5%

Directions: Multiply.

$$\begin{array}{r} 5 \\ \times 3 \\ \hline 15 \end{array}$$

$$\begin{array}{r} 6 \\ \times 4 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$$

$$\begin{array}{r} 8 \\ \times 3 \\ \hline 24 \end{array}$$

$$\begin{array}{r} 7 \\ \times 5 \\ \hline 35 \end{array}$$

$$\begin{array}{r} 9 \\ \times 2 \\ \hline 18 \end{array}$$

$$\begin{array}{r} 10 \\ \times 3 \\ \hline 30 \end{array}$$

$$\begin{array}{r} 9 \\ \times 5 \\ \hline 42 \end{array} \times$$

$$\begin{array}{r} 4 \\ \times 5 \\ \hline 20 \end{array}$$

$$\begin{array}{r} 9 \\ \times 4 \\ \hline 36 \end{array}$$

$$\begin{array}{r} 6 \\ \times 2 \\ \hline 12 \end{array}$$

$$\begin{array}{r} 4 \\ \times 4 \\ \hline 16 \end{array}$$

$$\begin{array}{r} 0 \\ \times 5 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 7 \\ \times 4 \\ \hline 24 \end{array} \times$$

$$\begin{array}{r} 5 \\ \times 2 \\ \hline 10 \end{array}$$

$$3 \times 1 = \underline{3}$$

$$5 \times 10 = \underline{50}$$

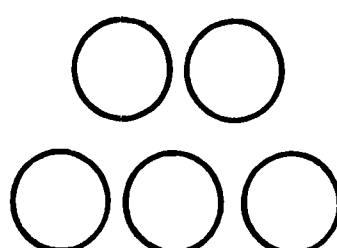
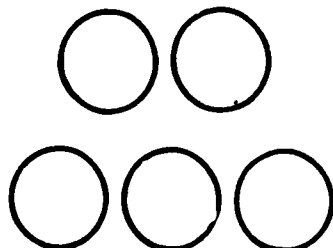
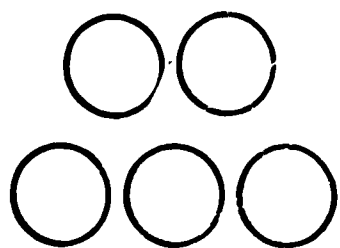
$$2 \times 8 = \underline{16}$$

$$3 \times 7 = \underline{21}$$

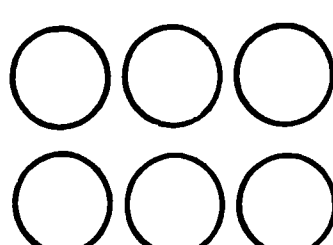
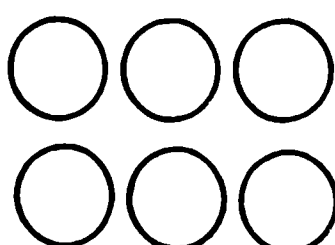
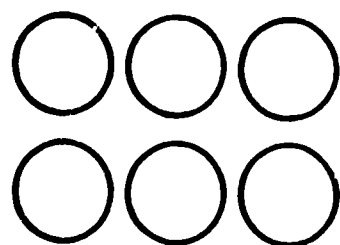
$$4 \times 2 = \underline{8}$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	NO. OF PTS.	%
	19	95
	18	90
	17	85
	16	80
	15	75
	14	70
	13	65
	12	60
	11	55
	10	50
	9	45
	8	40
	7	35
	6	30
	5	25
	4	20
	3	15
	2	10
	1	5

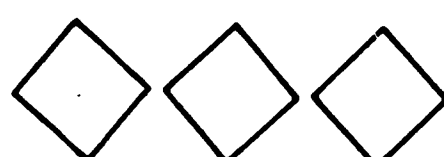
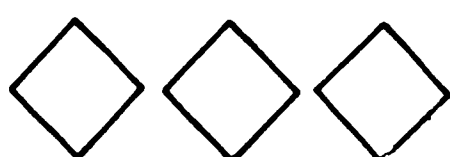
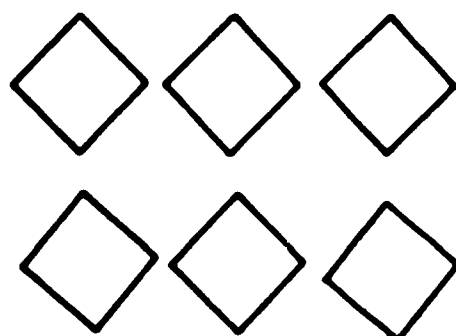
Directions: Fill in the blank to complete each equation.



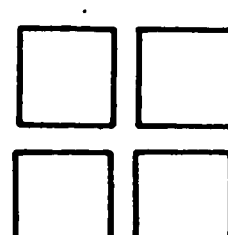
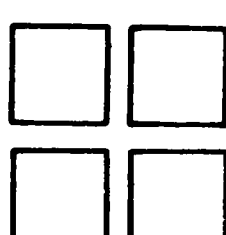
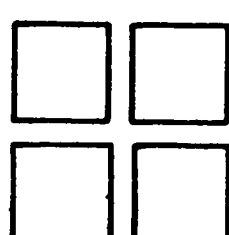
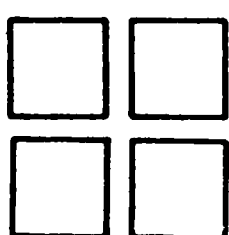
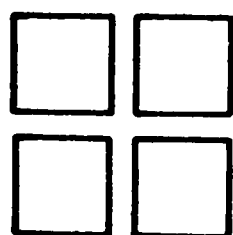
$$\underline{3} \times 5 = 15$$



$$3 \times 6 = \underline{18}$$



$$4 \times \underline{3} = 12$$



$$\underline{5} \times 4 = 20$$



$$4 \times \underline{2} = 8$$

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	NO. OF PTS.	%
	5	100%
	4	80
	3	60
	2	40
	1	20



Directions: Multiply.

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	S	100%
	NO. OF PTS.	%
	4	80
	3	60
	2	40
	1	20

$4 \times 3 =$  12

$3 \times 6 =$  18

$3 \times 4 =$  12

$6 \times 3 =$  18

$1 \times 7 =$  7

$3 \times 5 =$  15

$7 \times 1 =$  7

$5 \times 3 =$  15

$9 \times 2 =$  16

$2 \times 9 =$  16

X

Directions: Circle the answer.

How many factors are there in the problem  $6 \times 1 = 6$ ?

one

two

three

four



In the problem  $3 \times 4 = 12$ , which number or numbers are products?

only 3

both 3 and 4

3, 4, and 12

only 12

In the problem  $3 \times 4 = 12$ , which number or numbers are factors?

only 3

both 3 and 4

3, 4, and 12

only 12

In the problem  $4 \times 5 = 20$ , what is the 20 called?

factor

sum

quotient

product

In the problem  $2 \times 5 = 10$ , what is the 5 called?

factor

sum

quotient

product

C I R C L E  C O R R E C T  B O X	TL. PTS	
	5	100%
	NO. OF	%
	PTS.	
	4	80
	3	60
	2	40
	1	20

C I R C L E  C O R R E C T  B O X	TL. PTS.	
	NO. OF PTS.	%
	5	100%
	4	80
	3	60
	2	40
	1	20

Directions: Solve each problem. Write your answer on the line and label it.

Jane had 4 boxes with 5 pencils in each box. How many pencils did Jane have in all?

20 pencils

In basketball, Smith scored 7 points in each of 3 games. How many points did Smith score in all?

21 points

Dorothy had 2 fishbowls. Each fishbowl contained 9 fish. How many fish did Dorothy have in all?

18 fish

Roberto filled 6 bags with apples. Each bag held 5 apples. How many apples were in the 6 bags?

30 apples

How many marbles would you have if you had 3 boxes with 9 marbles in each box?

27 marbles

SCHOOL STAMP

U. S. 2-3

STUDENT NAME

Susan Markham

STUDENT NUMBER

1 2 3 4  
U. S. 4 5 6

GRADE

4  
9

ROOM

102

UNIT

D-Mult.

U. S. 10 11 12

UNIT DATES

UNIT BEGAN

3/3

U. 13-16

UNIT ENDED

3/12

U. 17-20

DAYS WORKED\*

U. 21-22

SCHOOL CALENDAR

BEGAN

U. 23-25

ENDED

U. 26-28

Worked

SKILL BOOKLETS

DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX.
PRES.	INIT.	NO.	NO.	TECH		POINTS
S. 13-16	S. 17-19	S. 20-21	S. 22-27	S. 58-71		
3/3	NB	1	Read Student Page			
			2		6	6
			3		8	8
			4		6	6
			5		5	5
			8		6	6
			11		6	6
3/5	NB	1	13		18	18
3/6	NB					
3/6	AIDE					
3/7						
3/11						

Scores and records Posttest information on the Prescription Sheet:

- Maximum points per skill
- Students points per skill
- Percentages per skill
- Average score and percentage
- Date corrected (3/16)

CURRICULUM TEST

PART 1		PART 2		SC'S	DAYS*	NOTES
SCORE	%	SCORE	%	INIT.	WORKED IN SKILL	
	S. 72-73		S. 74-75		S. 76-77	
				JW		
				JW		
				JW	1	
				JW		
				SD		
				SD	2	
				SD		
				SD	3	
4/4	100	4/4	100	JW	4	
8/8	100	5/6	83	JW	1	
12/12	100	9/7	0	SD	1	
				SD		25
				SD		
				SD	1	
				JW		
				JW		
				JW	2	
				SD		27

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

OVERFLOW

U. & S. 79

INIT CARD: "11" IN COLUMN 90

KEYPUNCH SAMPLE

TO 78  
U. 32-33 U. 34-35  
80 95

PRE AND POST TEST SCORES

ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
			V.		V.		V.		V.
X 1	5	3	60	5	100				
X 2	5	0	0	5	100				
X 3	8	8	100	8	100				
X 4	20	3	15	18	90				
X 5	5	0	0	5	100				
X 6	5	2	40	4	80				
X 7	5	0	0	5	100				
X 8	5	5	100	5	100				
X	58	21	36%						

# MATHEMATICS UNIT TEST

## RECORD

NAME Susan Markham  
NUMBER 1234

**CLASS 4**

[illegible]

**UPDATE AND PLACE IN STUDENT FOLDER.**

35636

Examine the Posttest starting on page 346.

On your Prescription Sheet #1, check the skills in the unit that are below 85%.

Examine these skills carefully and analyze Susan's work on Posttest in these skills.

Write a general statement about Susan's performance on the entire Posttest:  
Susan demonstrates mastery of all skill objectives but makes random errors in multiplication facts.

Describe how Susan worked with the prescription: She worked with extreme independence.

Based on your analysis of Susan's work, you decide to: (check one)

- ☐ Extend prescription for the same skill.
- ☐ Assign a second CET for the same skill.
- ☐ Assign entire CET for skill \_\_\_\_.
- ☐ Assign Part II of CET for skill \_\_\_\_.
- ☐ Write initial prescription for skill \_\_\_\_.
- ☐ Assign a Posttest.
- ☒ Assign the next unit Pretest.

Why? Susan demonstrated mastery of this unit and will now work in the next unit as indicated on her Placement Profile.

Note: Write "Mastery" and your initials on the front Prescription Sheet.

1. Review the information on your Prescription Sheet to get a total picture of Susan's performance on this unit.
2. Check your Prescription Sheet against the model sheets starting on Page 353.
3. If the information on your sheets is recorded incorrectly, refer to the point in these materials where you made your error by using the page references on the model.
4. Record (in the role of Aide):
  - a. Days Worked
  - b. Number the Prescription Sheet pages



# MATHEMATICS PRESCRIPTION SHEET

PAGE: 1 OF 3

*Mastery 100*

STUDENT NAME *Susan Markham*

STUDENT NUMBER *1 2 3 4*  
U. S. *4 5 6 7*

SCHOOL STAMP U. S. 2-3

GRADE *4* ROOM *102*  
U. S. *9*

UNIT *D-MULT*  
*1, 2, 4, 5, 7* U. S. *10 11 12*

UNIT DATES			
UNIT BEGAN	<i>3/3</i>	U. 13-16	
UNIT ENDED	<i>3/16</i>	U. 17-20	
DAYS WORKED*		U. 21-22	

SCHOOL CALENDAR			
BEGAN	Development of Prescription		
ENDED	Page References		
Worked			

SKILL BOOKLETS								CURRICULUM TEST				SC'S INIT.	DAYS* WORKED IN SKILL	NOTES
DATE	PRES.	SKILL	PAGE	INST.	SCORE	MAX.	PART 1	PART 2						
PRES.	INIT.	NO.	NO.	TECH CODES		POINTS			SCORE	%	SCORE			
S. 13-16	S. 17-19	S. 20-21	S. 22-27	S. 28-31	S. 32-37	S. 38-43	S. 44-49	S. 50-55	S. 56-61	S. 62-67	S. 68-73	S. 74-79	S. 80-85	S. 86-91
1	3/3	YMB	Protest											
2	3/3	YMB	1	Read Student Page										192
3				2		6	6							
4				3		8	8						1	
5				4		6	6							
6				5		5	5							
7				8		6	6						2	
8				11		6	6							226
9	3/5	YMB	1	13		18	18						3	
10	3/6	YMB	1	16	CET			4/4	100	4/4	100	IN	4	233
11	3/6	YMB	2	16P	CET			5/5	100	5/6	83	IN	✓	236
12			3	17P	CET			14/12	100	7/7	0	SD	✓	238
13	3/7	YMB	4	Read Student Page										244
14				1		18	18							
15				2		13	13						1	
16				3		3	10							
17				12P	09	31	31							
18				13P	09	10	10						2	

CODES	INSTRUCTIONAL TECHNIQUE
01	TEACHER TUTOR
02	PEER TUTOR
03	SMALL GROUP (2-10)
04	LARGE GROUP (11-UP)
05	SEMINAR
06	CURR. TEXTS
07	OTHER TEXTS
08	FILM STRIPS
09	RECORDS, TAPES
10	RESEARCH
11	TUTOR OF OTHERS
12	OTHERS

PRE AND POST TEST SCORES									
ENTER SKILL NUMBER	ENTER POINTS PER SKILL	PRE	%	POST	%	POST	%	POST	%
▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
X <i>①</i>	<i>5</i>	<i>3</i>	<i>60</i>	<i>5</i>	<i>100</i>				
X <i>②</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>100</i>				
X <i>3</i>	<i>8</i>	<i>8</i>	<i>100</i>	<i>8</i>	<i>100</i>				
X <i>④</i>	<i>20</i>	<i>3</i>	<i>15</i>	<i>18</i>	<i>90</i>				
X <i>⑤</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>100</i>				
X <i>6</i>	<i>5</i>	<i>2</i>	<i>40</i>	<i>4</i>	<i>80</i>				
X <i>⑦</i>	<i>5</i>	<i>0</i>	<i>0</i>	<i>5</i>	<i>100</i>				



PAGE: 2 OF 3

STUDENT NUMBER	1	2	3	4
U. S.	4	5	6	7

UNIT	D-MULT			
	U. S.	10	11	12

SCHOOL CALENDAR		
BEGAN		J. 23-25
ENDED		U. 26-28
Worked		///

[illegible]

PAGE: 3 OF 3

Susan Markham

1	2	3	●
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**U. S. 2-3**

4

UNIT

D-BOLT

**U. S.**

9

U. S.	10	11	12
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## SCHOOL CALENDAR

UNIT BEGAN

U. 13-16

UNIT ENDED

U. 17-20

**DAYS WORKED\***

**U. 21-22**

**BEGAN**

**U. 23-25**

**ENDED**

**U. 26-28**

**Worked**[illegible][illegible]